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DIESEL RAILWAY TRACTION SUPPLEMENT

The June issue of THE RAILWAY GAZETTE Supplement, illustrating and describing developments in Diesel Railway Traction, will be ready on June 1, price 1s.

GOODS FOR EXPORT

The fact that goods made of raw materials in short supply owing to war conditions are advertised in this paper should not be taken as indicating that they are available for export

NOTICE TO SUBSCRIBERS

Consequent on the paper rationing, new subscribers cannot be accepted until further notice. Any applications will be put on a waiting list and will be dealt with in rotation in replacement of subscribers who do not renew their subscriptions

POSTING "THE RAILWAY GAZETTE" OVERSEAS

We would remind our readers that there are many overseas countries to which it is not permissible for private individuals to send printed journals and newspapers. THE RAILWAY GAZETTE possesses the necessary permit and facilities for such dispatch.

We would emphasise that copies addressed to places in Great Britain should not be re-directed to places overseas

TO CALLERS AND TELEPHONERS

Until further notice our office hours are:
Mondays to Fridays 9.30 a.m. till 5.30 p.m.
The office is closed on Saturdays

ANSWERS TO ENQUIRIES

By reason of staff shortage due to enlistment, we regret that it is no longer possible for us to answer enquiries involving research, or to supply dates when articles appeared in back numbers, either by telephone or by letter

ERRORS, PAPER, AND PRINTING

Owing to shortage of staff and altered printing arrangements due to the war, and less time available for proof reading, we ask our readers' indulgence for typographical and other errors they may observe from time to time, also for poorer paper and printing compared with pre-war standards

Railway Charges and Costs

In recent weeks increasing interest has become apparent in the manner in which railway costs have risen during the war, and its disproportion to the upward adjustments in charges which occurred early in the conflict. The matter was dealt with in our last week's issue, when it was pointed out that ultimately some closer co-relation of railway charges and costs will be essential if the railways are to operate on a self-supporting basis after the war. *The Sunday Times* last week devoted its City Notes to a review of increased railway costs and among ways in which the resultant inequalities might be dealt with after the war suggested that railway charges might be increased to about 50 per cent. above their pre-war level. *The Financial News* takes the view that it is the knowledge that railway costs have increased, and lack of any statement of any post-war adjustment which the State will be prepared to authorise to meet changed conditions, which is holding back many investors from the home railway market. For months railway equities, which are gilt-edged stocks for the duration of the war, have been giving yields out of alignment with other issues, as is shown below:—

	Yield per cent.	Yield per cent.	
L.M.S.R. ord.	7.9	Assoc. Portland Cement ord.	3.1
L.N.E.R. sec. pre.	8.3	Distiller. ord.	3.5
G.W.R. ord.	7.4	Assoc. Elec. ord.	3.8
So.thern def.	8.1	Co. rta Ids ord.	2.8

The Financial News suggests that the railways consider the Government broadly as pledged to make the necessary adjustment between prices and costs, and that the Chancellor's Budget speech suggested that the Government may be thinking on the same lines in a wider context.

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Lord Woolton on Post-War Exports

In a debate on economic policy in the House of Lords on May 16, the Minister of Reconstruction, Lord Woolton, declared that our economic policy must be based on realities and that the Government was committed to a policy of full employment. It was endeavouring to work on the basis of an expansionist policy, and was acting in concert with the Empire and with foreign countries to establish world conditions favourable to the development of our own export trade. He believed that other countries recognised the importance of our having a large export trade, but securing it would depend on one factor more important than Government regulation—the efficiency of our own manufacturers and their ability to secure that trade. He called on manufacturers to make the utmost use of their skill and enterprise, and to apply all the scientific knowledge which they have used so fully in war to produce efficient, and in adequate volume, commodities to meet the needs of the people in times of peace. Lord Bennett had asked whether the experts who have devised the plan for an international monetary fund had any knowledge of the attitude of other nations with respect to tariffs and their effects on this country. Lord Woolton said that no action had been taken to endanger the present position as to Empire preference; he could not say, however, that on tariffs the Government had come to definite conclusions.

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Personal Initiative in Soviet Russia

Pre-war official statements from Soviet Russia tended to emphasise developments in the direction of standardisation and mass production, and to create the impression that personal initiative was discouraged. Advocates of the Soviet system contended that this was true only to the extent that the use of initiative to make personal profit to the detriment of others was barred. Undoubtedly, experience has resulted in many modifications of the early rigidity of the régime, and recent news from Russia would seem to indicate that personal initiative is not dead, but, under official encouragement, is playing no mean part in furthering the war effort. This week we publish a short article, cabled to us from Moscow, directing attention to the exceptional importance which the railways of Central Asia have acquired, and emphasising the great contribution which staff co-operation has made towards their achievements. Broadly, the examples cited are of two kinds, one the more intelligent loading of goods vehicles to secure more economical use, and the other the more skilful management of locomotives by their crews. The former is an interesting sequel to the article on Freight Working in the U.S.S.R., published in our May 19 issue (page 521).

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Federation of British Industries and Education

The Education Committee of the Federation of British Industries has issued a report in which it deals at some length with the educational background of those beginning on the administrative, managerial, and technical sides of industry. It recommends that industry should associate itself with local employ-

ment advisory committees and that industry, through its appropriate trade associations or local groups of firms, should look favourably on any suggestion for the release of some of its own employees for part-time or full-time teaching. Teachers at technical schools and colleges should also be given opportunities to obtain a first-hand view of industrial techniques. It urges that some form of vocational training is necessary for those employees not covered by apprenticeship schemes, and it notes with approval the increasing tendency of undertakings to appoint education officers. Many of the suggestions for adult education and systematic training to supplement the individual's works experience are already in being on the railways, such as group discussions and conferences. The committee suggests weekly meetings to discuss the week's work, and special discussions on difficulties met with, developments in business administration, production technique, works management, sales development and marketing, and favours the encouragement of staffs to make the most of facilities in technical colleges and professional institutes.

Diesel Transport in Persia

Since the Americans replaced the British forces in the working and maintenance of the Trans-Persian Railway, in January, 1943, they have made various changes in the motive power of this steeply-graded line to handle the increasing tonnages of food and armaments passing to Russia by this route. The oil-burning 2-8-0 steam locomotives imported from England were relegated to secondary shunting duties, and for a time the main line was operated by Baldwin engines, but soon the American Forces introduced diesel traction in the form of Alco-G.E. diesel electrics of 1,000 h.p., and a fleet of these 6-motor units is at work pulling 900-ton trains from the Persian Gulf ports of Bandarshahr and Khorramshahr across the summit to Sultanabad. Two units are necessary to haul these heavy trains over the steep gradients, and a single crew operates the two units in multiple when it is necessary to shorten the working periods of the men in the desert temperatures up to 130°. These units are equipped with 1,600-gal. fuel tanks, and make a run of 650 miles without service stops.

Overseas Railway Traffics

Recent payments of interest arrears and continued increases of traffics in many instances have drawn attention to South American railway stocks in general and to Argentines in particular. Although the receipts of the Central Argentine and the Buenos Ayres & Pacific have shown considerable expansion in the 45th and 46th weeks of the financial year, this has not been the case with the Buenos Ayres Great Southern and the Buenos Ayres Western which have registered decreases of £15,240 and £780 respectively in that period. The Central Argentine increase for the two weeks is £114,042, and that of the Buenos Ayres & Pacific is £57,600. On the Antofagasta the increase to date in 1944 is £30,770, with gross receipts of £556,690. Nitrate Railways traffics up to May 15 this year total £75,540, an improvement of £20,390.

	No. of weekly traffics	Inc. or dec.	Aggregate traffic	Inc. or dec.
		£	£	£
Buenos Ayres & Pacific*	46th	128,700	+32,400	4,934,760 +332,820
Buenos Ayres Great Southern*	46th	149,820	-9,720	8,128,980 +724,320
Buenos Ayres Western*	46th	60,060	+540	2,577,780 +89,580
Central Argentine*	46th	171,150	+52,212	6,990,912 +940,503
Canadian Pacific	20th	1,229,200	+160,600	22,504,000 +2,964,600

* Pesos converted at 16s to £

United of Havana receipts continue to be very satisfactory and the total for the 46 weeks of the financial year has reached £2,642,728, showing an advance of £284,919.

American Station Modernisation

Much is being done all over the United States towards the modernisation of station buildings and equipment. Recently the Chicago & North Western Railway has taken in hand the stations at Oshkosh, Neenah-Menasha, Appleton, and South Beaver Dam, Wisconsin, all of which are on routes served by this company's fleet of streamline diesel-hauled "400" trains. Indeed, these station reconstructions are part of a general policy of passenger service improvement, which included the introduction of the streamliners and accelerated service generally; and they have been carried out at a fraction of the cost that would have been entailed by new buildings. In general, the interior of each station building has been opened into one large room; the open ticket counters have been provided in place of the previous enclosed rooms with ticket windows; modernistic interior decorations have been introduced, such as the counter front, built of glass blocks, illuminated at night by continuous neon tubes displaying contrasting colours, and with an aluminium-trimmed black top; there are also

oak seats for waiting passengers; fluorescent lighting; and many other improvements. Externally the buildings have been modified where necessary to bring them into line with modern canons of good architectural taste. The underlying idea is to make rail travel as attractive a proposition as possible, not only in the trains themselves, but also throughout the passenger's contact with the railway.

Fishplate Breakages

From time to time the voice of the metallurgist is raised to warn the engineer of the risks arising out of the existence, in details of equipment subject to severe stresses, and alternating stresses in particular, of sharp corners in metallic surfaces. In such corners concentrations of stress are produced; these, in their turn, become the starting-point of hairline cracks; continuation of the stresses causes a creeping extension of the cracks, until failure occurs. The process is accelerated if corrosion is also taking place, resulting in failure from what is known, not altogether appropriately, as corrosion fatigue. It is, perhaps, surprising that more use has not been made of this knowledge in an attempt to reduce the breakage of fishplates from which most railways suffer. There has been some alleviation of the trouble on certain lines by a change from the British Standard straight-carbon fishplate to a medium manganese composition; and on others by the toughening effect of oil-quenching; but no change whatever has been made in the design of the standard plate, which has sharp right-angled corners both top and bottom. It is at these corners that much of the cracking begins; other cracks start from the right-angled corners of the holes that are punched through the plate. The same applies, for that matter, to certain rail failures; where corrosive influences are present, in particular, many cracks at rail-joints may have their beginning in the sharp-edged square corners of the rail-end, or in the square corners of the fishbolt holes. Examination might be directed with advantage to the possibility of rounding these corners, as part of the manufacturing process.

Concrete Sleepers

The shortage of timber, arising from wartime conditions, has stimulated interest in various forms of concrete sleeper, and as a result of research and experience, some progress has been made in the evolution of a satisfactory sleeper. In our last week's issue we referred to two papers read before the Institution of Civil Engineers, and on page 545 we deal with a paper read last Saturday before the Permanent Way Institution. Because of price, weight, and handling factors, it is perhaps unlikely that, except in emergencies such as the present, the concrete sleeper will have any large use in this country. There are considerable areas overseas in which it is difficult at all times to obtain suitable timber for sleepers, and it may be that the concrete sleeper, in one or other of its forms, may solve a problem. This point was touched on briefly by Brigadier H. L. Woodhouse, who has had considerable experience in railway operation in India, during the discussion on the papers read at the Institution of Civil Engineers. The total output of the forests of India is sufficient to supply only half the needs of the 5 ft. 6 in. track in that country, and on the North Western Railway alone nearly 7,000 miles of line gives some indication of the scope for a suitable substitute.

The Cost of Shunting

Private Bills have been introduced into both the United States Senate and the House of Representatives "to provide that the established railroad freight rates cover the receipt and delivery of loaded cars at the points of loading and unloading"; that is to say, that the railways shall be compelled, not merely to work wagons into and out of the sidings of the firms that they serve, but also to undertake all the marshalling necessary to place each wagon at its specific loading or unloading point. The Legislative Committee of the Interstate Commerce Commission does not favour the proposal, on the ground that it would alter practices based on principles that have been laid down by the I.C.C. after full consideration, and upheld by the Supreme Court. The chairman of the committee, in a letter representing the majority view, has pointed out that there would be a considerable difference between "spotting" wagons at the correct point on the spur tracks of small factories, and doing the same work in the extensive private sidings of large industrial firms, where the railways might not be free to carry out their work at their own operating convenience. The probable result would be allowances by the railways to the larger concerns to cover the carrying out by the latter of their own shunting work, and this would be contrary to the principle of equality of treatment "which is the outstanding objective of the Interstate Commerce Act." The absorption by the railways of all shunting charges, some of which might exceed the revenue from the line-haulage, would almost inevitably lead to increased freight rates.

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Derailed Destroyed Power Signal Box

Early last year a derailment of a freight train led to the destruction of the important power signal box at the west end of Utica station on the New York Central lines. This was constructed in 1915 as part of a general improvement of the station and layout and was provided with an electric-power frame of 224 levers capacity, of a type then being much adopted in America. All signals were semaphores and the 3-arm speed signal system of aspects was used. The layout was simplified in after years, one branch line being singled, and at the time of the accident only 146 levers were working. Very bad weather prevailed and the provision of emergency measures to enable the station to be worked was rendered extremely difficult. When planning the renewal of the operating portion of the installation it was decided to depart from the individual-lever system hitherto employed and adopt route setting on the entrance and exit principle. Although war restrictions made it difficult to proceed with certain parts of the work, the new working was brought into full service just over 5 months after the accident. The adoption of the panel instead of the frame has allowed of the operating floor of the signal box being reduced by one half in length and affords an interesting illustration of a tendency which has become increasingly evident in the United States of recent years. Light signals have now replaced the semaphores at this station.

■ ■ ■

Condensing Locomotives

Condensing locomotives have proved to be rather temperamental creatures, needing much careful nursing, in spite of which they have been ungrateful enough, in many cases, to reward the anxious solicitude lavished on them by extremely disappointing performances. That being so, it is not surprising that private firms and railways which have experimented with them are sometimes reluctant to make known the inner history of their ventures into this field, so that the amount of really useful published information is meagre. It was therefore with the greater interest that we heard Professor Lomonosoff, and his son and co-author, Captain George Lomonosoff, give their paper on "Condensing Locomotives" at the general meeting of the Institution of Mechanical Engineers on May 19. We intend to publish abstracts of the paper and the ensuing discussion in our next issue. The authors managed to collect practically all the information at present available on this subject, and they are to be complimented on their clear-cut arguments stating, without bias, the pros and cons of condensing as applied to steam railway traction. The chief interest attached to the prospects of condensing locomotives as an alternative to diesel traction in dry, waterless countries. The authors showed that whatever type of cooler is used, air must eventually be the cooling medium, for railway traction. With air cooling, however, a high vacuum is impossible at high atmospheric temperatures; hence a high efficiency is out of the question. The advantage due to condensing is merely that of conserving boiler water. In this country the large available supplies of good water make condensing scarcely worth while for steam traction.

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Efficient Superheating

Superheating, although its benefits were realised quickly, so that the process was adopted with striking swiftness, was not thoroughly understood in its early days as a means for raising locomotive efficiency. It was an innovation, as far as railways were concerned, and as such the proportioning of the superheater header, elements, and flues, and the degree of superheat to be imparted to the steam, were decided largely by empirical methods. Nor was opinion united on whether a low degree of superheat, with simpler maintenance, was more advantageous than a high degree, which despite increased thermal efficiency, brought lubrication and other troubles in its train. Similarly, the number of square feet of superheating surface varied widely between different designs. Today, thirty years later, there is still diversity in the proportions of superheating equipment and in the final steam temperature; on the L.M.S.R., for instance, certain cases come to mind (for example, the Stanier four-cylinder 4-6-2s and three-cylinder 4-6-0s) in which an original design with comparatively small superheating surface has been modified to provide a much greater amount. No doubt extended experience with the type of fuel used had its influence on these alterations; but we suggest that the thorough removal of soot and ash from the flues and spaces between the tubes forming the elements will do more to promote efficient superheating than any other measure. We have seen locomotives arrive for general repairs with the flues choked with ash, so that they might as well have been blanked off. This is a field in which a wider adoption of sootblowers might do much to improve running conditions.

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The Argentine Fuel Dilemma

THE striking increases in the receipts of the Argentine railways, week by week, considered by themselves, may lead to the conclusion that the companies are enjoying considerable prosperity. No less impressive are the official figures of the country's foreign trade. Exports mount up, month by month, and will probably continue to do so. The supply of shipping to the River Plate progressively increases as the failure of the U-boat campaign becomes more apparent, though, unfortunately, the same influence does not favourably affect the volume of imports, which show no signs of revival, not through lack of shipping, but because the major industrial countries, chief among them Great Britain and the United States, are too busy winning the war to despatch supplies to South America.

In normal times, a considerable part of Argentine imports consists of coal, petrol and fuel oil, the local output of which falls far short of the country's needs. The railways depend to a great extent upon Welsh coal, supplies of which have been almost completely cut off, leaving the companies to operate their services as best they may on firewood, maize, wheat and such fuel oil as can be assigned to them from the limited production of the local oilfields. In the course of the past few weeks the country has gathered one of the largest maize crops in its history, which will help to relieve the acute fuel shortage. The bulk of the 10-million-ton crop will be unsaleable, in any event, in the customary markets overseas and, even if it were, the local fuel scarcity is so serious that it would be necessary to use it preferentially in locomotive fireboxes, electric power stations and boilers of industrial works, all of which are functioning under great difficulties.

Altogether, therefore, the position of the Argentine railways is far from being happy and it has long been impossible to maintain the services at the level necessary to meet all the country's transport needs. Indeed, so drastically have passenger services been curtailed that it is nothing unusual now-a-days for long-distance travellers to have to wait as long as 15 days before being able to secure accommodation on the limited number of main line trains running to the provinces. Nor are the goods services in any better case. A very large part of the wagon capacity is fully occupied in transporting firewood for the companies' own locomotives, of which, because of the much lower calorific value, three or four times as much tonnage is required to do the same amount of work as coal or oil. Even so, the full extent of the gravity of the situation is under-stated.

Argentine railway traffics are "unbalanced," as they are largely composed of agricultural products for export, that is, four or five tons of grain and linseed flow towards the ports for every ton of traffic which moves in the opposite direction, mostly general merchandise. In normal times, the haulage of imported coal from the ports to locomotive depots in the interior presents few difficulties, inasmuch as plenty of discharged grain wagons are always available which would otherwise return empty to the loading points in the cereal zones. Under prevailing wartime conditions, however, the companies have to obtain their fuel supplies from the quebracho forests in the far-off interior and, except for the relatively small tonnage used at locomotive depots in the immediate vicinity, train loads of firewood have to be hauled distances as great as 500 miles in the same direction as the already predominant flow of grain traffic for export.

Hence, the amount of empty wagon mileage is intensified and it requires little imagination to realise that the imposing weekly traffic figures, derived, as they are, largely from low-rated firewood for power houses and industrial plants, not to mention the considerable tonnage for domestic consumers, can be earned only at the cost of greatly increased operating expenses. Nor is the important fact likely to be overlooked that wear and tear of permanent way and equipment are mounting at a rate which may well give rise to serious apprehension and will undoubtedly create post-war problems of great magnitude, more especially as the Argentine railways, unlike the main-line companies in the United Kingdom, have been unable to build up reserves to meet arrears of maintenance which it has not been possible to carry out during the war years. No less disconcerting is the accumulation of renewals work, for which little or no provision has been made for many years. The companies have availed of every opportunity to bring before the Government the seriousness of the situation, actual and impending, and are still hopeful that a measure of relief may be forthcoming in the form of an upward revision of rates and charges which may enable them to provide, to some extent, for the heavy maintenance and renewals programmes which inevitably lie ahead.

The Argentine public was entitled to expect that the road motor industry would have come to the aid of the railways, but,

strange as it may seem in a land where oil production has increased considerably in recent years, there is an insufficiency of petrol which is almost as trying as the lack of other fuels. Car owners, among the first to feel the pinch, have accentuated the difficulties by not renewing their licences and using the public services, rail and road. Normally, the private motorist uses about 12,000 gallons a day in the city of Buenos Aires and environs alone, but for a long time little more than half that quantity has been available. Although public passenger transport undertakings are treated preferentially, there is constant anxiety as to their ability to maintain even the curtailed services, more particularly in the towns in the interior—Rosario, Cordoba, Rafaela, Mar del Plata and Lincoln having been mentioned recently among the black spots; suspension of taxi-cabs is a frequent occurrence in Cordoba, the largest consuming centre outside Buenos Aires. Conditions in the far-distant and lesser known towns in the provinces are even worse, as evidenced by a recent despatch from a village in Catamarca, which laments that for 15 days there has been no kerosene for lighting purposes and passenger and goods transport by road has had to be suspended through lack of petrol. The inability of the road motor goods operators to maintain their services has caused their customers to turn to the already overburdened railways.

The output of petroleum from the Argentine oilfields is restricted by the inability to obtain additional drilling equipment, most of which comes from the United States, nor is the position rendered any easier by the fact that the whole of the production of the largest of the oilfields, at Comodoro Rivadavia, Patagonia, in the south of the Republic, has to be shipped by tanker, the only means of transport available, and tankers, it need hardly be mentioned, are just as difficult to come by as drilling and refining machinery. The remaining oilfields are in the provinces of Mendoza, Salta, and Neuquen, well away from sea and river and not yet served by pipe lines. They are wholly dependent, therefore, on the limited tank wagons and track capacity of the railways.

Conveyance of War Workers

MANY well deserved tributes have been paid to the part played by the British railways in the National war effort. It is perhaps natural that these tributes should be associated in the public mind with the more spectacular operations such as the conveyance of the 300,000 troops evacuated from Dunkirk and the transport of men and stores for the North African invasion.

There are, however, many facets to the wartime work of the railways and one of the most important of these is the daily conveyance of hundreds of thousands of workers employed in the manufacture of the various munitions of war. The railways have always catered in a large way for factory workers and numerous workmen's trains were run daily in pre-war days for the specific purpose of conveying workers from suburban stations to the great industrial centres. War conditions, however, have created an entirely new set of circumstances, which have necessitated a considerable expansion of workmen's services, in many cases with a reversal of the normal flow of traffic, namely, away from the industrial centres to Government factories located in the surrounding countryside. Many of these factories are staffed with men and women workers directed from distant parts of the country. To find accommodation for these imported workers it has been found necessary frequently to spread the billeting over a fairly wide area, thus adding still further to the transport requirements. In the aggregate it may be fairly claimed that the daily transport of war workers constitutes one of the greatest undertakings the British railways have ever been called on to handle, and some idea of the immensity of the task may be gained from the fact that every week nearly 7,000 special trains are run for Government factory workers. In addition there are millions of people working at privately-owned factories, and a large proportion of these also rely upon rail transport.

In many cases special train services for war factories have been arranged with local consultative committees set up by the Regional Transport Committees. The consultative committees consist of representatives of the factory managements, the workers, and transport organisations. Times are furnished to the local railway officers of the shifts which are being worked and the train service arranged to meet variations in the factory working arrangements. These committees are able to consider traffic movements peculiar to each area, and their activities have extended to the co-ordination of road and rail services and the staggering of working hours.

The timekeeping of workmen's services is obviously of paramount importance; a delay of only a few minutes to a train

conveying five or six hundred workers may well mean the loss of many valuable production hours and consequent loss of output of urgently required materials. Special attention has, therefore, to be given to the running of workmen's trains, particularly in view of the fact that in many cases the section of line involved is already heavily occupied. In such circumstances the utmost care has to be exercised in regulating the trains and the general high standard of timekeeping of workmen's services reflects great credit on all concerned in the operation of these trains.

Apart from the daily conveyance of workpeople to and from the factories, there is an appreciable amount of rail travel in connection with annual and public holidays, more particularly on the part of the "imported" workers, who naturally desire to pay visits to their homes as and when opportunities occur. It will be recalled that this question was recently raised in Parliament, and the Parliamentary Secretary to the Ministry of War Transport stated that everything possible is being done to organise the staggering of holidays with a view to easing the burden of such traffic during the coming summer.

In a number of instances it has been necessary to construct special stations adjacent to war factories or to enlarge existing stations or halts. This has involved certain other new works such as additional signalling and the provision of crossovers to enable engines to run round their trains. The amazing figures of Britain's war production quoted recently by the Minister of Production are striking evidence of the energy and skill which have been brought to bear on this vital problem, and the part played by the railways in connection with the transport of the workers has been an important factor in the excellent results which have been achieved.

U.S.A. Study of Railway Air Transport

THE Association of American Railroads decided some time ago to establish a special organisation to study the prospects of railway traffic. A Committee, consisting of 48 railway officers with a great variety of experience, has been at work since the summer of 1942 under the chairmanship of Mr. R. V. Fletcher. The Committee may be said to have taken all transport for its province and has naturally set up a number of sub-committees to examine specific subjects. In January the Air Transport sub-committee submitted an initial report* on civil aviation and, in view of the importance of this question, we propose to take advantage of the Association's permission to use the material which has been assembled from dependable sources. Railwaymen everywhere should be informed about the potentialities of their latest competitor.

The basic Federal statute regulating air transport in the U.S.A. is the Civil Aeronautics Act, 1938, which created a Civil Aeronautics Board of five members. The Board grants certificates of convenience and necessity to air carriers, fixes passenger fares and charges for mail, and generally controls air operations in much the same way as the Interstate Commerce Commission exercises authority over rail and road transport. An Administrator of Civil Aeronautics has charge of an operating agency which deals with such matters as airways, airports, types of planes, pilot licences and safety rules. The Board is required to approve acquisitions of control over air lines and cannot do so unless it finds that "the transaction proposed will promote the public interest by enabling such carrier other than an air carrier to use aircraft to public advantage in its operation and will not restrain competition." At present the Board construes this section of the Act as prohibiting railway companies from obtaining control of airlines. Our Parliament took a more liberal view in 1929 when it authorised the railway companies to fly to and from aerodromes in their own territories (excluding the Metropolitan Police District), provided that the flights were confined to European countries and did not go beyond Warsaw. The reasonable comment in the report on the American situation is worth quoting. "Up to this time, Congress has not given adequate consideration to the integration of air transportation policy with a broader national policy covering all agencies of transport, nor has it sufficiently considered the development of co-ordination between air, land and water transport. . . The nation needs, but does not have, a unified transportation policy, designed to stimulate co-operation and cost-reducing competition."

PASSENGER AIRLINES

Before America entered the war, seventeen domestic airlines were operating over 46,000 route miles. In 1940 they flew nearly

* "Initial Study of Air Transportation." Association of American Railroads, Transportation Building, Washington, D.C.

May

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May 26, 1944

THE RAILWAY GAZETTE

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861 million passenger miles, an increase of 56 per cent. on 1939, whereas the railways worked 7,288 million passenger miles in Pullman coaches, a decrease of 239 millions, or 3 per cent. The ratio of air passenger mileage to rail passenger mileage in Pullmans was close on 12 per cent.; in 1939 the ratio was 7 per cent. and two years earlier only 5 per cent. There have been large increases in both air and rail travel in the war years, but the carryings are abnormal and safe deductions cannot be drawn from a comparison of the figures. In 1940 the proportion of air passengers to the total travellers between any two cities increased, as a rule, with the distances. New York is 95 miles from Philadelphia and the amount of air travel was negligible, but 11 passengers out of every 100 flew the 214 miles between New York and Washington. Between New York and Detroit, 486 miles apart, the percentage rose to 21, representing over 33,000 air passengers, and 13,750 people made the long air journey of 2,500 miles between New York and Los Angeles as compared with 45,000 rail passengers—a ratio of 23 per cent. The figures contradict a common notion that the aeroplane is primarily suited for far journeys; more people want to travel for distances varying from 200 to 500 miles than for long miles. That is a fact worth cogitating over in the homeland, where many of us have been prone to think that flying might be a business proposition in a vast country like America, but would not catch on in Great Britain, where 600 miles is an exceptionally long journey.

The charge for air travel on some trips is about 5 cents per mile, much the same as the *de luxe* rail fare. On longer trips a saving by air can often be calculated if allowance is made for the reduction in transit time. The main inducements to go by air are, however, speed, frequency of service, and the prestige of flying. The chief drawbacks are the risk of accident or sickness and the possibility of services being cancelled. For instance, all flights from New York were stopped for four or five days before Christmas, 1940, one of the travel peaks of the year. Minor disadvantages arise through the limit on free luggage and the fact that airports may be from 4 miles, as at Washington, to 14 miles, as at Los Angeles, from the business centres.

AIR MAIL

The airlines could scarcely have kept in being without air mail revenue. In the fiscal year 1942 they were paid \$23,545,000 for flying 9,350 tons of mail. In the same period the railways received \$20,783,000 for handling 159,562 tons. In other words, the airlines got more for flying 5.5 per cent. than the railways received for carrying over 94 per cent. of the same class of mail. Not more than 285 cities in the U.S.A. are located on existing air routes. Some 90 millions of the population are outside these cities. As an experiment with direct air mail service to smaller communities, five pickup routes radiating from Pittsburgh were established in 1940. These serve 115 places on a total of nearly 1,400 route miles. The extension of such pickup and local airline arrangements would have a serious effect on the railways, but the cost may turn out to be prohibitive even in the United States, where the Post Office Department already had lost 119 million dollars on air mail transport from 1930 to 1942.

AIR CARGO

Railway Express Agency Inc. pioneered cargo carrying by air in the States. The public has found the combination of air and rail express service in one agency to be a convenience and the co-ordination is so close that about 30 per cent. of the air express forwardings move part of the way by rail express. The traffic consists mainly of articles or goods used in processes of production rather than finished commodities. Machinery and hardware contribute nearly a third of the weight consigned and of the charges paid. Air express has been increasing at a faster rate than either air mail or passenger carryings. The tonnage expanded five times between 1935 and 1940, when 1,078,190 consignments, weighing 3,850 short tons, were booked by the Railway Express Agency. The gross revenue was over 3 million dollars, of which roughly two thirds was paid out to airlines. The average length of haul of air express is over 1,000 miles and charges to the public have now been reduced to 77 cents per ton-mile. That is still a high rate compared with the average revenue of less than one cent per ton-mile earned by the railways during the last ten years, especially when we remember that much of the air revenue is derived from using spare weight-carrying capacity on scheduled passenger flights.

PUBLIC AID TO AIR TRANSPORT

Federal, state and municipal governments have provided air transport with services and facilities to such an extent that the airlines have merely to furnish and fly the planes and to handle passengers, mail and express at airports. The Federal Government has furnished airways, fields and lighting, radio communication and other aids to navigation, the cost of which exceeded 24½ million dollars in 1940 alone. Weather bureau reports and other facilities are also supplied free. At the end of 1939 there had been invested in publicly-owned airports over 200 million

dollars and the amount is growing by leaps and bounds. The La Guardia airport at New York cost 40 million dollars and is maintained at the expense of the City, but as air traffic is congested there, another airport called Idlewild is being built in South Brooklyn at a cost of 165 million dollars. Chicago and many other cities also contemplate expensive projects. Never in the field of transport was so much spent by so many for the benefit of so few. The aviation industry used all their airports for infinitesimal payments in relation to the true costs.

The Federal Government also bears a heavy expense for research conducted on planes, engines, propellers and other equipment. The National Advisory Committee for Aeronautics conducts three research laboratories by means of an annual appropriation by Congress of round about 20 million dollars. The largest laboratory at Langley Field, Virginia, has some 20 wind tunnels. One of these has a wind speed up to 750 m.p.h., another has fans driven by motors of 25,000 h.p., and a third, for testing large planes, is housed in a building ten storeys high. Through this N.A.C.A. organisation, commercial operators obtain full advantage of research work performed for the Army and Navy.

The aggregate of all the direct and indirect subsidies to American civil aviation is tremendous. It is not astonishing that many public men are alarmed at the excessive tax burden: their feeling is that the air industry is no longer an infant, but has reached a point when it should try to get on a sound economic basis.

FUTURE PROGRESS

The C.A.B. has received nearly 400 applications for licences to fly new services. These would add 500,000 miles to the existing air routes and would serve 4,000 places. Many of the projects are submitted by the 17 airlines now operating within the United States and by other concerns already interested in aviation, but railways, steamship companies, bus and motor coach combines, tramway and taxi-cab proprietors, road hauliers, and furniture removers are amongst the applicants. Some department stores even propose to give helicopter services! No doubt many of the schemes are speculative as expansion of civil airlines seems to be ruled out for the period of the war. The number of commercial planes now flying is only 176—half the number used in 1940. On the other hand 3 million men and women are enrolled in the American Army and Naval Air Services and another 2½ million are employed by contractors for the production of air equipment. At the end of the war there will be a multitude of trained airmen and aircraft workers seeking employment. Further, the Government will have thousands of surplus planes on its hands and many of these machines could readily be switched over to civilian purposes. There may be a strong temptation to use their skilled labour and the spare planes for developing services which will not be self-supporting and any move of that nature would be detrimental to the railways.

The study which we are reviewing notices this point, but does not attempt to define the future relations between the railways and air transport. Its authors have been content with a factual investigation of their subject. Presumably a second study of a less tentative kind will next be undertaken to bring out the difference between the economics of the two forms of transport. The true position is not generally appreciated and statements circulated by enthusiasts often fail to give the full facts. A striking example of this danger is to be seen in *The Times* of May 9, where a Special Correspondent discussed the control of civil aviation and wrote of the C.A.B. system as having made "commercial flying in the United States safe, popular, efficient and cheap." The first three adjectives might be queried with some reason, as only 2,728,000 passengers were carried in 1940 and no fewer than 35 were killed, but, so far from air travel in the States being cheap, the real cost of conveyance is high and is partly borne by the taxpayers. The Americans themselves are not agreed that the future development of air commerce should continue on the present lines and a number of Bills designed to revise the whole programme of government regulation and promotion of air transport is pending in Congress.

MODERNISATION OF IRON & STEEL TRADE.—Mr. Arthur Dorman, in his presidential address to the Iron & Steel Institute, in London recently, said: "With iron and steel being made in many new countries during the last ten or twenty years it is essential that the finishing trades of this country should have as a base a highly efficient heavy iron and steel industry capable of producing an adequate output of iron and steel under the most modern conditions. The industry must regain and expand its export trade, which is only possible if all sections of the industry are equipped to meet world competition. There is no reason why the 1937 output of steel should not be exceeded. This will necessitate a great deal of reconstruction, as war conditions have deferred many schemes of modernisation. It is important that a commencement of this work should be made at the earliest possible moment."

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

G.W.R. Diesel Railcar at York

The Associated Equipment Co. Ltd.,
Southall, Middlesex. May 19

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR.—With reference to the picture of a G.W.R. railcar built by this company shown on page 533 of the current issue of your paper, we think the picture is rather spoilt by the removal of the valance covering the engine. This was done I am advised by Mr. Cleaver, our railcar engineer, because of the difference in the loading gauge below platform level of the Great Western Railway and some of the branches on the London & North Eastern system, on which the car was recently tested.

Yours faithfully,

For the Associated Equipment Co. Ltd.,
S. W. GOODEY,
Publicity Manager

Movable Platforms

Westminster, S.W.1. April 28

TO THE EDITOR OF THE RAILWAY GAZETTE
SIR.—The letter published in your issue of today clearly shows that movable sections of platform have been adopted in various

completion in 1914, there was a piece of movable platform, giving access from Platform 1 to Platforms 2 and 3, across the single line which provided physical connection between the Circle and the St. John's Wood lines. This movable platform took the form of a four-wheel truck and was run into a short siding in the connecting tunnel when the line was required for a train to pass. It was replaced in 1911, when the connecting line was being doubled, by a form of drawbridge which was abolished in 1913 on the completion of new overhead access between the platforms. The new double-line junction at Baker Street was brought into use on November 4, 1912.

Yours faithfully,

PRAXITELES

[Illustrations of three of the movable platforms to which a correspondent referred in our April 28 issue are published on page 550.—ED. R.G.]

Turbine Condensing Locomotives

2, Old Queen Street,
Westminster, S.W.1. May 20

TO THE EDITOR OF THE RAILWAY GAZETTE

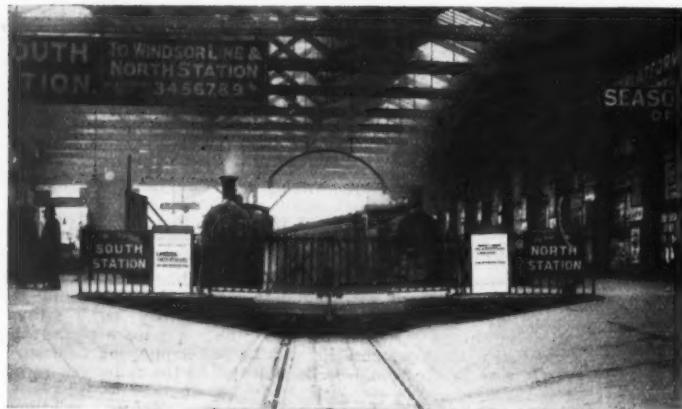
SIR.—The paper on condensing locomotives by Professor Lomonosoff and Captain Lomonosoff which was presented at the Institution of Mechanical Engineers on Friday, May 19, gives a most interesting world survey of condensing locomotives at the present time. It must be admitted that this country's contributions in that direction have not been particularly outstanding, but that may well be, as the authors suggest, because in such a climate as ours the advantages of condensing are much less than they would be in other parts of the world.

The authors give some space, however, to two very interesting experimental efforts by the North British Locomotive Company; the first is the electro-turbo-locomotive of 1910, and the second the *Reid-MacLeod* turbo-locomotive which was exhibited in 1924 at Wembley. The authors make the interesting observation that the second locomotive was possibly a re-built version of the first; and Professor Lomonosoff in personal conversation with me has pointed out that the arrangement of the bogies and also of the wheelbase was the same in both these engines, thus supporting the authors' contention. I think it will be agreed generally that the authors, in their statement that "the history of the first, known as the *Reid-Ramsay* locomotive, is somewhat obscure," are not guilty of exaggeration. It is very much to be hoped that someone may come forward with further information about these two extremely interesting and, from the national point of view, most important experiments.

Although in this case private locomotive-building firms were concerned, there is a tendency among the railways of this country, which seems regrettable, to suppress the publication of details of any experiments which they do not deem to be brilliantly successful; thus engineers the world over are deprived of all means of finding out just how much work has been done and what results have been achieved during the experimental stages of any novel idea or principle in railway locomotion. Unfortunately, this outlook is extremely deeprooted and is always instinctively bound up with the idea that an unsuccessful experiment would impair the prestige of the administration concerned. In this direction one is sorely tempted to apply the old saying "the man who never made a mistake never made anything," and so it is with feelings of regret that we find that so little information of these two notable experimental types has been allowed to be published. It is to be hoped, however, that after so many years have elapsed a more enlightened outlook on the matter may prevail, and that someone may be permitted to come forward with additional authoritative information.

Yours truly,

W. O. SKEAT



The movable section of platform at Waterloo, L.S.W.R., before the rebuilding of the station

parts of the country, and continue to render valuable service in special circumstances. Two interesting examples which have not yet been mentioned, both of which were abolished in the decade before grouping, were those at Waterloo and Baker Street.

When the London Bridge—Waterloo Junction extension of the South Eastern Railway was opened, on January 11, 1864, a connection was made with the L.S.W.R. at Waterloo by a single line which crossed Waterloo Road on a bridge, ran across what is now the circulating area of the main Waterloo Station, and joined the middle road which lay between Nos. 4 and 5 platform roads. Except for a short-lived service of L.N.W.R. trains, no regular train service worked over this connecting line, which was used for the exchange of vehicles and for special trains. The L.N.W.R. service in question was inaugurated in July, 1865, between Euston and London Bridge, via Camden, Kilburn, Addison Road, Battersea, and Waterloo. The service was diverted to Cannon Street in February, 1867, and withdrawn at the end of December, 1867. When the connecting line was out of use, a section of movable platform was placed in position, as shown in the accompanying picture, to allow passengers and luggage to cross the connecting line at platform level, although they could also cross it at rail level by means of the ramps shown in the picture. The connecting line, and with it the movable platform, was abolished in the course of the Waterloo Station rebuilding which was completed in 1922, in accordance with the Parliamentary powers obtained in 1899 and 1900, which provided for its closure. The L.S.W.R. began this rebuilding some years before the last war, and the impending removal of the physical junction with the S.E.R. station was announced by the South Eastern & Chatham Railway in February, 1911.

Before the rebuilding of Baker Street Station, Metropolitan Railway, which was in progress for several years until its com-

FINTONA TRANSPORT HEARING.—The Northern Ireland Transport Appeal Tribunal has refused the claim by the Omagh Regional Education Committee for an Order requiring the Northern Ireland Road Transport Board or the Great Northern Railway Company to provide new or improved travelling facilities between Omagh and Fintona for school children. Having regard to the effect of war conditions on the operations of the transport undertakings, the tribunal found that the case for an Order as requested by the applicant had not been established. We made editorial reference to this application, and to the quaint G.N.R. horse-drawn train which serves Fintona, in our April 7 issue, page 354.

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The Scrap Heap

ODDS AND ENDS

Over 1,000,000 pieces of scrap iron salvaged by the L.M.S.R. staff at Beswick (Manchester) Goods Depot have made up 236½ tons. No piece weighed more than ½ lb.

* * *

It has been estimated that 25,000 horses are employed in the London carrying trade, that their value is a million and a quarter, and that the cost is for food alone £800,000 a year.—From the "Scientific American" of March, 1894.

* * *

Despite wartime economies, the British railways still have an annual stores bill of £53,000,000. The annual purchases include 15,500,000 tons of coal, 3,400,000 sleepers and crossing timbers, 4,000,000 yd. of cloth, 7,200,000 gal. of lubricating oil, and 35,400,000 gal. of petrol and fuel oil.

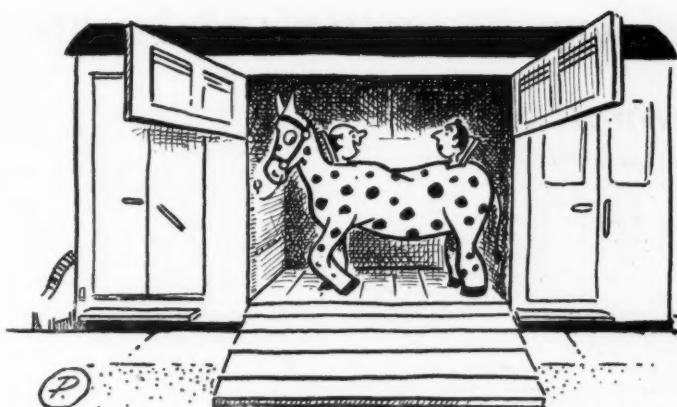
THE GOVERNMENT AND RAILWAYS

Last year the Government made £62,099,000 out of its wartime bargain with the railway companies. How wonderfully profitable Government control must be, say the planners. What has the nation been missing all this time?

A preposterous deduction. Under war conditions the railways carry 50 per cent. more freight and passenger traffic than before. And, in wartime, they spend little in capital improvements. For 10 years before the war they were spending £12,000,000 a year.

The fact that they cope with wartime demands so well is a tribute not to Government control, but to private control before the war.

There is a growing tendency to imagine that Government control means greater efficiency, better service. But not a shred of evidence to back that idea. Because



"Anyhow, Charlie, it's better than standing in the crowded corridor"

of heavy, exceptional and sustained demand for their goods or services, many businesses are now making money. Even some newspapers can run at a profit nowadays.

The railways are no exception, even though they carry an additional overhead in the Ministry of War Transport. The men who do the job now were doing it before the war. No argument here for letting civil servants run the trains.—From the "Daily Express."

IT HAPPENED IN MAY

Mill Hill Park Station, on the District Line, was opened in May, 1883. In March, 1910, its name was changed to Acton Town. A modern structure, better able to cope with increasing traffic and the subsequent extension of the Piccadilly Line, was opened in 1932. Nearly four million passengers used this station during the next year, apart from exchange traffic. In 1884, the service was 144 trains a day. Today, the District

and Piccadilly Line trains provide well over 1,000.

SALUTING

Mr. Churchill in the House of Commons recently, replying to Mr. Tinker, said that a salute was an acknowledgment of the King's Commission and a courtesy to Allied officers. He did not think it desirable to make an Order that did not make it a breach of discipline not to salute when off duty.

Mr. Thorne: Is the right hon. Gentleman aware that if I met him in the street I would salute him?

The Prime Minister: I hope we should be walking arm in arm.

LORD MONKSWELL ON ELECTRIFICATION

By far the most important advantage claimed for electrification is that it enables a larger number of trains to be run than is possible with steam. . .

Comparative timings of an electric multiple unit train and a train drawn by a single steam locomotive of modern design show that, other things being equal, the electric train economises about half a minute over the steam train at each start. It does not stop more quickly. Stopping is entirely a matter of brakes and these are not worked electrically.

What makes the real difference in the number of trains that can be run over a line is the signalling. . . So the extra-availability of electric trains as compared with steam trains is simply a saving of half a minute at each start, an advantage which, even for trains making frequent stops, it is hardly worth spending millions to secure, while for long distance trains it is worth nothing at all.

Enormous capital expenditure is required for electrification, and before any profit can be secured interest on it must be earned.—Extracts from a letter in "The Daily Telegraph."

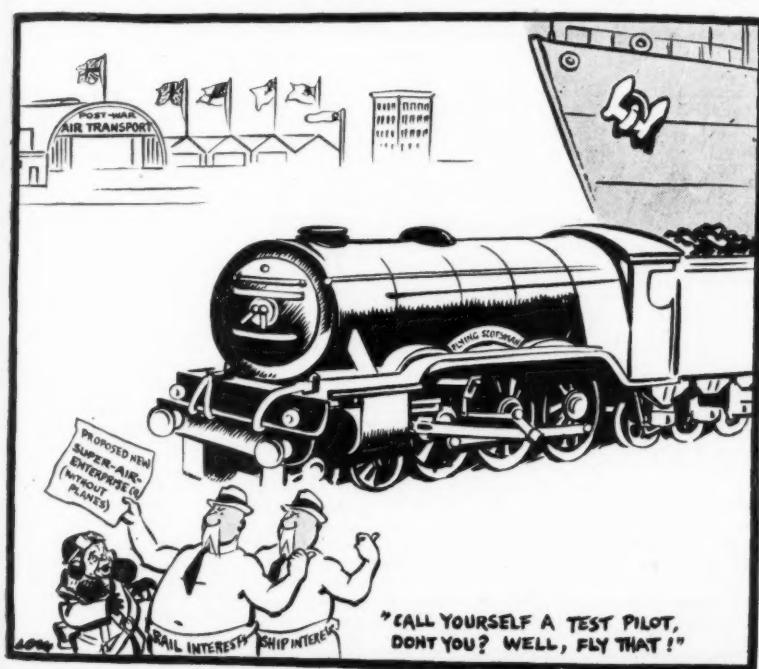
TAILPIECE

(Many passenger trains may be withdrawn without notice during the summer)

The man who schemes to travel far
In spite of plea and ban
May yet discover that his train
Is not an "also ran."

And delegates on congress bent
May suffer equal pain.
The place, the date, the rooms, the route
Are fixed—but where's the train?
And worst of all, the double line
May prove a one-way track,
And leave to those it carried there
The joy of walking back.

E. C.



[Reproduced by permission of the proprietors of the "Evening Standard"]

A "Low" view of railway and shipping aviation

May 26, 1944

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

SOUTH AFRICA

Passenger Travel Position

At a recent meeting of the Standing Advisory Committee of the South African National Publicity Association the Chairman, Mr. C. M. Hoffe (General Manager of the South African Railways & Harbours), said that military movements and the transport of fertiliser, coal and other commodities directly concerned with the prosecution of the war were responsible for the inconveniences suffered by the travelling public. Those movements had to take precedence. Another factor was that not a single new engine had been added to stock since the outbreak of war, although some were expected before the end of the year. Even so, South Africans had been among the more fortunate of all civilian populations in the present war.

Railway Hotels

Mr. Hoffe also said that the Railways & Harbours Administration had decided on the building of two State hotels—one in Cape Town and the other in Pretoria. They would be operated by the Administration. He added the Administration was going to spend more on them than had been spent so far on hotels. It was not going to compete in the hotel industry; but the fact of having two hotels which would more than compensate tourists for any disabilities they might suffer in other places would, in the end, benefit the whole country and all its hotels.

INDIA

Post-War Railway Reconstruction

Post-war reconstruction plans were referred to by Sir Edward Bentall, War Transport Member, Government of India, in his railway budget speech in the Central Assembly on February 16. He said that the principal subjects on which the Railway Board was concentrating, in addition to rehabilitation, were (1) the implementing of the decision to construct locomotives in India; (2) the improvement of travel amenities, particularly for lower-class passengers; (3) staff welfare; (4) improvements in the handling of traffic; (5) the participation of the railways in road services; and (6) the development of the railways in accordance with the general policy for road and rail transport.

Sir Edward then discussed the means of financing post-war measures, many of which, he said, would be unremunerative. He pointed out that it was clearly unsound that non-paying expenditure should be financed by loan, and he gave reasons why the railways would not be able to meet such expenditure out of future surpluses. That led to the question of whether it was reasonable to increase rates and fares. Rail transport was among the cheapest things in India; there had been only a $4\frac{1}{2}$ per cent. overall rise over pre-war fares, and the ability of passengers of all classes to pay for travel was out of proportion to the capacity of the railways. There were three good reasons for an increase in fares, namely, its effect on reducing, or at any rate preventing more passenger travel; its deflationary effect, due to the immobilisation of a substantial volume of currency; and the opportunity it would offer of taking the first step towards building up a fund for post-war reconstruction.

"The argument in favour of building up a fund," stated Sir Edward, "is to my mind paramount and irrefutable, and the Governments of the future would rightly blame our shortsightedness and lack of courage if we failed to put them in a position to carry through the post-war plan which we are preparing for their fulfilment." He then explained that, for the foregoing reasons, the Government had decided to increase passenger fares by 25 per cent. [as briefly recorded in our April 14 issue, and for the reason therein quoted, the Government of India since decided not to proceed with the proposal for an increase in fares.—ED., R.G.].

UNITED STATES

The Tamiami Champion Accident

A report has been issued by the Interstate Commerce Commission on the disastrous derailment and collision of two sections of the Tamiami Champion streamliner, of the Atlantic Coast Line Railroad, which, as recorded in the March 24 issue of *The Railway Gazette*, took place at Rennert, North Carolina, early in the morning of December 16, 1943. Train No. 91, the Tamiami Champion (West Coast) on its southbound run, was travelling at 85 m.p.h. when the three rear coaches were derailed by a broken rail. Three breaks in this rail were due to transverse fissures; but as a result of the derailment the rail was broken into more than 60 pieces. Two months before the accident a Sperry detector car had operated over this section, but without detecting any fissures; the development of the fissures, therefore, must have been rapid, although none of them had worked out to the rail surface before the accident. None of the passengers or crew was injured by the derailment.

The derailed vehicles came to a stand 1,300 ft. beyond the point of derailment, with two of them foul of the northbound track; the rear end of the main train stopped 2,600 ft. further to the south. The flagman, who was near the rear end of the main train, proceeded to the back of the derailed coaches, and put down a lighted fusee, which would burn for 10 min., to protect his own track; gave signals with a white handlamp to the crew at the front end of the train to indicate that the train had parted; and then walked further to the north and stopped a freight train, which was approaching on the southbound track. But he failed to make it clear to his own train-crew either that its train was in two parts, or that the northbound track had been fouled. It so happened that a coupler knuckle between the second and third vehicles had fractured, and the crew apparently jumped to the conclusion that this breakage had caused the emergency stop; thus the men set about replacing this knuckle, and, although the fireman set out to protect the northbound track, he went without detonators, and, by slipping on snow, he damaged the fusee which he carried and was unable to light it. This helps to explain the almost incredible fact that when, 40 min. later, No. 8, the northbound Tamiami Champion (East Coast) approached the site practically nothing had been done to warn its driver of the obstruction.

The northbound streamliner was travelling at over 80 m.p.h. when it passed the main section of No. 91, and only then did the driver see a red light which was being

waved by a passenger (actually a tail-lamp off the rearmost derailed coach; but it was then too late. The locomotive and the first eight vehicles of the northbound train were thrown off the track by the derailed coaches of No. 91, and the second and third coaches of the former were demolished. As a result, 72 passengers were killed, and 160 passengers and 27 employees were injured; only one of these fatalities was in any of the originally-derailed vehicles of No. 91.

The line here is fully signalled with automatic block signalling, with train-stopping appliances; but after the first derailment nothing had occurred to affect the signalling of the northbound track, of which the signals were giving the normal "proceed" indication to the driver of No. 8. The disaster is stated to have been entirely due to the failure of the crew of No. 91 to conduct a proper examination of its train after the emergency stop due to the initial derailment, and then to take the appropriate steps laid down for the protection of both their own and the northbound tracks.

ARGENTINA

Status of Railway Employees

As the result of a request for a ruling on the point made by the interventor of the Union Ferroviaria and La Fraternidad, a Government Decree has been issued clarifying the status of the employees of the Argentine State Railways in respect of the new Civil Service Law. The Decree states that the personnel of the State Railways, and of ports administrated by the State and included in the provisions of Law No. 10,650, are excluded, in accordance with paragraph 6, article (1), from the Civil Service Law. This decision is based on the grounds that the promotions and so on of personnel concerned is governed by a scale, and by the agreements entered into between the Government, in its character of employer, and the Union Ferroviaria and La Fraternidad, representing the employees, which have proved satisfactory to both parties.

SWITZERLAND

State Financial Aid for Railways

According to a recent decision of the Federal authorities certain sums of money are to be granted to a number of privately-owned railways under the Federal Law of April 6, 1939, concerning financial aid to be given to private railway and shipping concerns. An amount of fr. 1,000,000 is to be granted to the South-Eastern Railway and the Furka-Oberalp Railway is to receive one of fr. 1,200,000. The Rhaetian Railway also is to obtain assistance.

In accordance with the provisions of article 5 of the Law in question, these grants are accorded subject to the Cantons concerned jointly providing financial assistance to the same amount in each case.

Machines for Supplement Tickets

In Switzerland, as in certain other parts of the Continent, it is customary to require the payment of supplementary fares for journeys made in certain express and fast trains. To ease the work at the booking offices at certain large stations, and to enable passengers already holding ordinary tickets to obtain their supplementary tickets quickly, the use of automatic machines is being tried at some half-dozen stations, where many persons pay extra to use expresses to reach points in their immediate neighbourhoods. The experiment is understood to have given encouraging results.

May

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Concrete Pot Sleepers on the G.W.R.

Methods of manufacture and experience in use explained by Mr. E. C. Cookson, Assistant to Chief Engineer, G.W.R., in a paper read before the Permanent Way Institution*

A BRIEF history of the evolution of "pot" sleepers on the G.W.R. may be a useful preface; the purpose of the paper is not to compare the merits of the G.W.R. type pots with the many designs adopted by other railway companies.

In 1917-18 various types of transverse and pot sleepers were tried on the Taunton Division, but failures occurred almost as

subjected to traffic at 10 m.p.h. at a density of 40 trains a day. Although cracks appeared in these pots, the test was not altogether unsatisfactory but, as the timber position had improved, the use of concrete as a substitute was not pursued.

Soon after the outbreak of the present war it was realised that the question of

chairbolts were symmetrically spaced in the pot. The mix of concrete was 1 : 1½ : 3, using granite aggregate and rapid hardening cement. Pots were made with chairbolt holes 12 in. and 11 in. centres to suit either G.W.R. 00. or B.S. 95 chairs.

In the first stages of laying in these pots, timber sleepers were used on each side of the joints and every third pair of pots was tied by a 2½ in. × 2½ in. × ¾ in. angle by means of the inner chairbolts. The pots had a small chamfer on the lower edge to facilitate handling.

In one case, after some little time in the track, it was found that several pots had cracked through the bolt holes and, although the mass was held together by

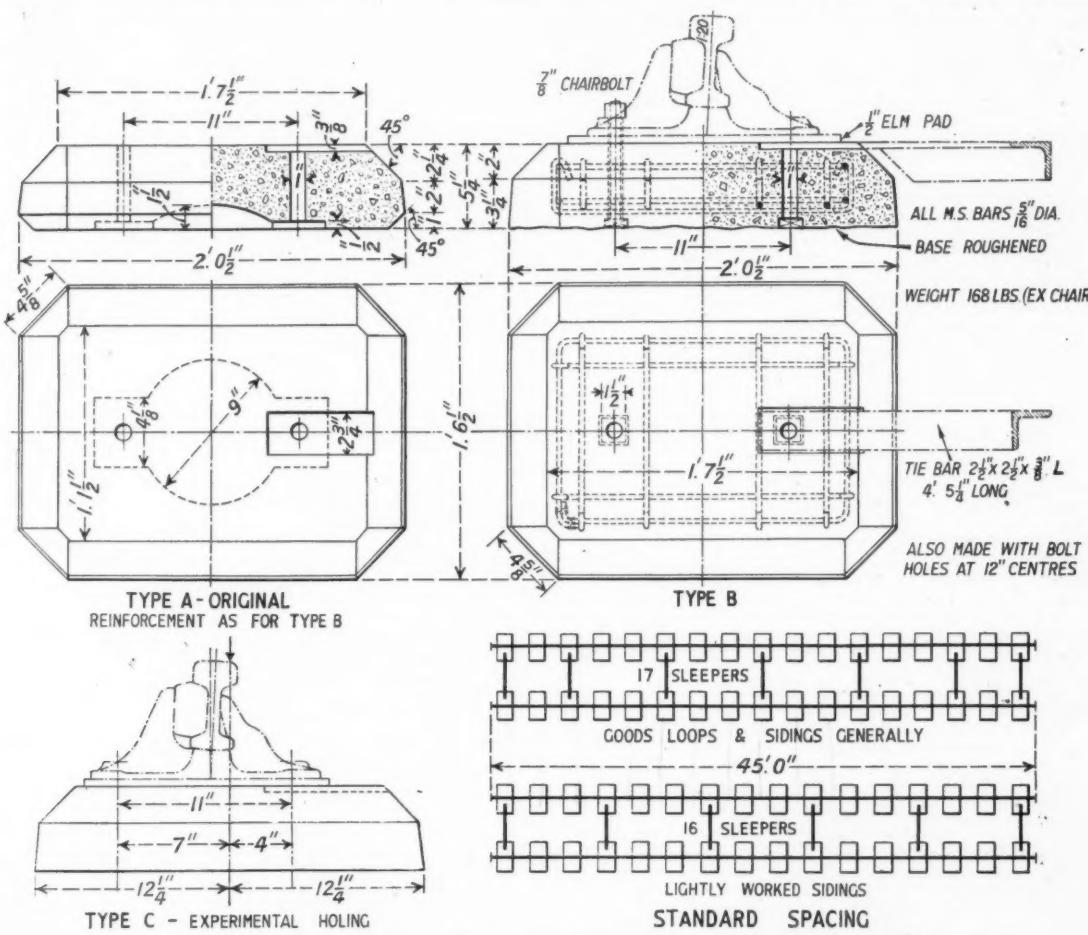


Diagram showing various types of concrete sleepers and general arrangement in track

soon as they were put in the track. Then 36 transverse sleepers 8 ft. × 8 ft. × 6 in. deep were put in the Barnstaple Branch and of these, six lasted two years, six for seven years, 12 for nine years and the remaining 12 were removed after 14 years for reasons other than failure. In this track the sleepers had been subjected to traffic at 30 m.p.h. at a density of 14 trains a day.

Circular concrete pots, connected by tie bars, were tried in a goods loop at Taunton with flat-bottom rails and were

alternatives for timber would need early consideration, if new timber was to be kept for main-line purposes and second-hand sleepers were to be released for Government work and Army operational purposes. The results of the previous trials were reviewed in conjunction with available information from other sources and it was decided to confine attention to the pot or block type for use in sidings and goods loops. In consequence, the design produced was that shown as Type A, which had a domical recess on the underside, a cage reinforcement of $\frac{1}{8}$ in. dia. steel bar, recessed chairbolt washers on the underside, a $\frac{1}{2}$ in. elm pad as a cushion between the chair and concrete and in which the $\frac{1}{8}$ in. dia.

the reinforcement and it was not at that time necessary to remove them from the track, several were removed for subjecting to test. The pots were mounted on supports giving a 9 in. clear span and a vertical load was applied to a piece of rail keyed in the chair.

Specimen 1 failed at 96 tons through new lines of fracture and the chair jaw broke.

Specimen 2 failed at 72 tons through new lines of fracture and the chair jaw broke.

As a comparison, Specimen 3 was a matured pot that had not been used in the track. The first crack appeared at 35 tons, a second at 57 tons and ultimate failure occurred at 77 tons.

* "The manufacture of concrete block sleepers, together with an indication as to the type and design of reinforced concrete transverse sleepers in use on the Great Western Railway," illustrated by a film and read on May 20.

Subsequent amendments (Type B) were made to the design and practice, as follow:—

- The domical recess was omitted and a roughened base used.
- The ribbed washer was dispensed with and a recess provided for the head of the chair bolt.
- Felt pads were substituted for the elm, and satisfactory tests were made without any cushion at all between chair and concrete, but as G.W.R. chairs have serrated bases, a felt pad was considered desirable to facilitate even bearing.
- Elm and felt pads were supplied with one round and one elongated hole to suit either 11 in. or 12 in. holing, thus avoiding special ordering.
- Timber sleepers at the joints were omitted and angle tie-bars used exclusively.

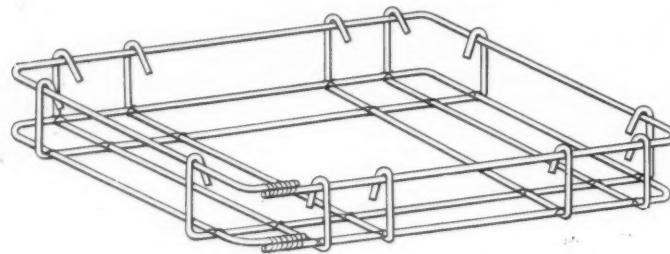


Fig. 1—Reinforcement cages made from $\frac{1}{2}$ in. mild-steel bar

From the above it will be seen that 100 per cent. saving in timber has been effected.

It was found that there was a tendency for pots to tip inwards with a resultant tightening of gauge. Consideration was given to this and it was decided to make some pots with the bolt holes slightly eccentrically disposed in the length of the pot, so that the line of thrust from the rail came through the centre of the pot. This has resulted in a slightly longer projection of the pot on the four-foot side (see Type C) which should contribute to stability. A number of this type of pot

The weight of a chaired pot of latest type is 217 lb. This compares with 237 lb. for a chaired creosoted timber sleeper and 550/600 lb. for a chaired concrete transverse sleeper. Special nips have been designed for handling pots either chaired or unchaired.

The first stage in the manufacture is the preparation of a timber pattern on which are mounted steel-socket plates which carry turned-steel dowels in the mould to provide the bolt holes in the finished pot. The socket plates are made with the holes $\frac{1}{2}$ in. out of centre so that by reversal provision is made for 11 in. or 12 in. centres. From this pattern a concrete mould (Fig. 2) is cast, and provision is made for the attachment of metal fittings by means of wood screws round which a coil of wire is fixed. All pots are cast in the inverted position and the bottom bevel on the pot is formed by the attachment of a welded metal frame to the mould. The reinforcement cages (Fig. 1) are made from $\frac{1}{2}$ in.

despatched to the line for works purposes, so that by the time they are laid in and ready for traffic, a total maturing period of some six weeks will probably ensue.

To conserve crossing timber, experiments have been carried out using pot sleepers in place of timber for that portion of turnouts between the heel of the switch and leg of the crossing. The width of a standard pot was found to prohibit the full use of this type and so a smaller block was designed which alternates with the standard. The standard blocks are tied with angle bars and the smaller blocks are left free.

Pot sleepers are being manufactured at the rate of 5,000 a week and well over 500,000 are in the track.

Although main attention has been paid to pot sleepers, the question of transverse sleepers has not been ignored, though the experiments on the G.W.R. may not have been on so large a scale as on other railways. In 1942, 200 each sleepers to designs by the Stent Precast Concrete Limited and Stanton Ironworks Co., Ltd., were laid in the main line at Slough and Radley; 50 per cent. of each type were laid in consecutive lengths at each place. To obviate the possibility of sleepers becoming centre bound, they were laid with an open grip down the centre of the four-foot.

One or two sleepers of the Stent type failed badly and a large number of others have developed haircracks. It has been suggested that the cracking is due to a kind of reflex action due to the liability of the sleeper to sag in the grip, whereas it is designed against centre binding. The grip has therefore been filled in lightly with ballast.

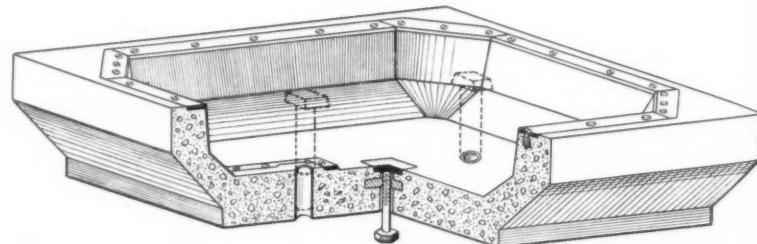


Fig. 2—Concrete mould in section, showing provision for metal fittings

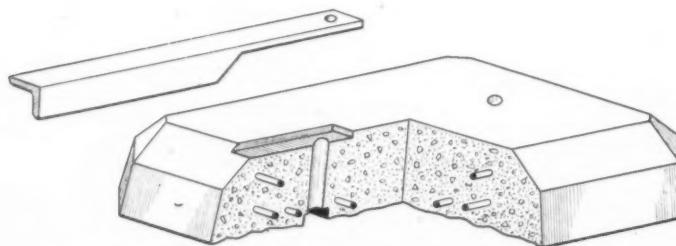


Fig. 3—Section of a pot sleeper and plate used in removing it from mould

was laid in track adjacent to the Type B pots, but the test result was negative, as no trouble was experienced on this site with either type.

Pot sleepers get a better bearing on ashes, but they have also been used successfully with stone ballast. Discretion was used as to the employment of pot sleepers on new embankments but little trouble has been experienced on new banks up to 10 ft. depth.

mild-steel bar cut, bent and fabricated by women. The moulds are cleaned and oiled before the cages are placed in position and the concrete is poured in.

When the concrete is set, the pot (Fig. 3) is jacked out of the mould by a plate recessed in the base of the mould, provided with a bolt for this purpose. The pots are date stamped and stacked. Three weeks are allowed for maturing in the stack, after which the pots can be

Generally, the sleepers that have cracked most are at joints. The running on these sleepers at 60/70 m.p.h. is good and gives the impression of a firmer foundation than on timber. A further 200 sleepers of the pre-stressed type, to a design by the Dowsett Engineering Company, were laid in at Burnham Beeches in the up main line. Another 200 amended Stent types are laid near Warwick. This type has the slots omitted, and in this case special "joint" sleepers, giving greater bearing area, have been used.

The main characteristics of design of the types of sleepers under test are:—

	Length	Width	Depth
	in.	in.	in.
STENT 1014/30	8	3	11
STANTON B.5981	7	6	10
DOWSETT 134	8	3	9
DOWSETT 153	8	6	10
STENT 1014/49A.	8	3	10
		12	6 (Joint)

It would appear from general observations so far that the pre-stressed sleeper is likely to give more favourable results, but neither type is giving satisfactory results under track circuit tests—there is too much leakage which is emphasised by hair cracks and moisture.

Mobile Rectifier-Substations

A useful range designed by the General Electric Co. Ltd.



100-kW. mobile rectifier substation giving a 220-volt d.c. two-wire supply, or alternatively, 50 kW. at 110 volts

ORIGINALLY designed to meet a wartime need, but with many peacetime advantages, a range of mobile rectifier substations has been placed on the market by the General Electric Co. Ltd., Kingsway, London. Their main purpose is to provide a d.c. supply during construction work; an emergency supply where a substation is out of action; a temporary traction supply, and a shore supply for ships unloading or undergoing repairs. The units are weatherproof and are produced for outputs up to 4,000 A. for

any commercial d.c. voltages. Types are available for rail or road transport and their mobility permits of speedy travel, an important feature which enables one substation to act as a standby for a number of others, thus effecting considerable saving over the present practice of installing a reserve rectifier of max. capacity in each substation.

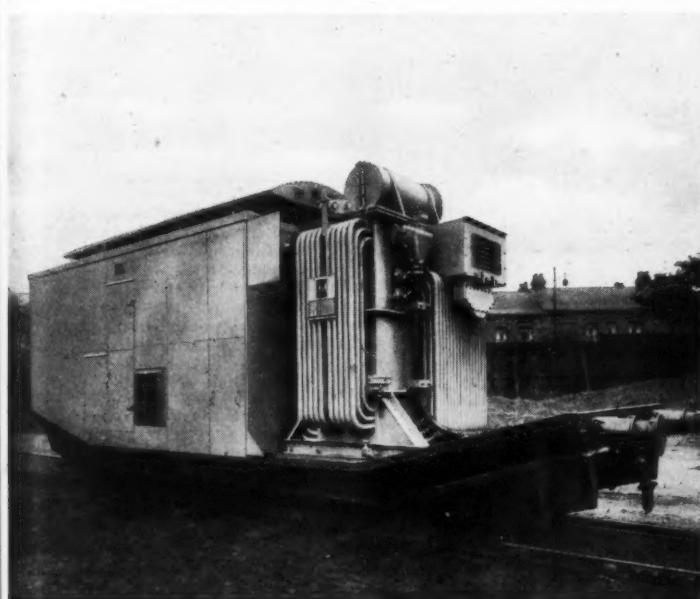
Amongst its temporary uses, the application of the mobile rectifier substation to electric railway systems deserves mention. The total cost of the traction installation

can be reduced considerably by having available a number of mobile substations which can be shunted into sidings at the various sites and be quickly connected to replace a unit which may be under repair. Furthermore, if certain lines are liable to be heavily loaded, and extra trains give rise to unusually high current demands, the use of mobile substations will back up the normal substations in a convenient and economical way.

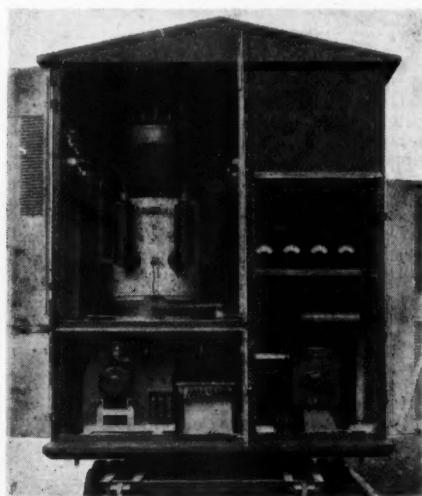
The electrical equipment comprises:—a.c. switchgear for the incoming supply; main transformer; rectifier cylinders, which are of six or twelve-phase, air-cooled, steel-clad pumpless type, together with ignition equipment, surge absorbers, cooling fans; rotary balancer (if required for 3-wire d.c. supplies); d.c. switchgear; earthing spikes, cables, tools. The d.c. output panel is usually fitted with a line-contact circuit-breaker or a quick-break double-pole knife switch and an ammeter and voltmeter. At the bottom of the panel, terminals are provided to which out-going trailing cables are connected.

The transformer may be of either the indoor or the outdoor type. The primary windings are usually delta connected and the secondary windings, six or twelve-phase star-connected, with interphase transformers situated in the same tubular tank. The transformer has also a tertiary winding for supplying the rectifier fan and auxiliaries. In a dual voltage equipment, a changeover switch for the selection of operating voltages is supplied. The switchgear is mounted at the end of the truck remote from the rectifier; double doors give access to the a.c. oil circuit-breaker and the d.c. panel.

When used on l.t. supply, the a.c. connections terminate in a special, earthed and shielded, three-pin plug with a robust watertight case provided with hand grips. A length of 4-core cable is supplied with one of these special plugs connected to each end. When in operation, one plug is inserted into the socket-outlet at the side of the unit, and the other plugged into the point of supply. In the case of h.t. supply, trifurcating sealing boxes are employed. The d.c. connections usually consist of flexible trailing cables which can



A 1,000-kW. 500-volt mobile rectifier-substation for railway workshop supply



A 500-kW. trailer rectifier cylinder, d.c. control gear, and rotary balancer

be connected to the terminals on the panel. Ventilation has been given careful consideration and special attention has been paid to louvres and grilles to ensure protection from driving rain and drifting snow. The equipment is, therefore, accommodated in a weather-proof sheet-steel structure and any roof openings are provided with deep coamings to keep out water.

Where side louvres are used to discharge the air, they are also designed to shed the rain. Cable connections are protected from the weather by special spouts for the individual leads, or a cable "flap," hinged to the body which affords a weatherproof opening.

A brief description of some typical rectifier substations in operation under service conditions may be of interest. The first example is a 920 kW double-wagon

equipment for converting from 11 kV, or alternatively 6 kV, 3-phase a.c. to 230 V d.c. The full load current of 4,000 A is shared between four d.c. panels. The equipment is housed in two fabricated-steel trucks, with boiler-plate sides and roof and stout oak floors provided with suitable ventilation inlets.

Another type are small 100 kW units for converting from 415 V, 3-phase, a.c. to 200 V, or 110 V d.c. One of these, illustrated, consists of a small pumpless rectifier all complete and mounted on one truck.

One of a number of mobile substations built to the order of a British railway is also illustrated. It consists of a 1,000 kW 500 V, 3-wire d.c. substation mounted on a standard two-axled well-wagon. The transformer is of the outdoor type arranged for an 11 and 6.6 kV, 3-phase,

a.c. supply; the switchgear and 1,000 A rectifier cylinders are all housed inside the welded boiler-plate kiosk. Access to the operating platform is through doors on each side and the operators can perform all the switching, control the rotary balancer, and take the necessary readings under cover. An external emergency trip is provided for shutting down.

A 500 kW substation for another railway company is accommodated in two standard goods wagons of the double-walled type, suitably ventilated. The output is either 2,000 A at 250 V d.c. or 1,000 A at 500 V d.c. The transformers and a.c. switchgear are housed in one wagon, and the rectifiers are mounted on either side of the d.c. panel in the other wagon. "Jumper" cables are provided for the connections between the two wagons.

Motorcoach Trains and Their Operation on British Suburban Railways*

Some advantages of multiple units

COMPARED with steam trains of equal capacity, motorcoach trains are shorter and lighter, have a higher acceleration and deceleration, and are easier to reverse at terminals. Multiple-unit trains have the further advantage that train formation may readily be altered to suit traffic conditions, and permit a frequent service to be maintained with a minimum expenditure of car mileage. The advantages of motorcoach trains cannot be fully realised unless the track system on which they run is specially designed for their operation.

Electrification is usually considered when a train frequency above four an hour is required. At first, the mere electrification of a steam line may suffice, but for a frequent service a rebuilding of the line on the lines suggested below becomes advisable.

With motorcoach trains a simple terminal can handle a more frequent service than can a more complex terminal with steam trains. Up to 45 motorcoach trains an hour can be turned on three roads.

Automatic signalling accomplished by track circuiting is often necessary on steam suburban lines and is essential on motorcoach lines handling a heavy suburban traffic.

Stations should be designed to be worked by a minimum of staff and so that passengers can pass readily to the trains from the ticket booth. Ticket booths combined with barriers and the clear labelling of platforms and staircases are features of well-designed stations.

The rolling stock on London's Tube railways provides the best example of body-design development. The old "gate" trains could not detract and entrain passengers quickly enough; hence doors were introduced in 1914 and air-worked doors in 1920. End as well as centre air-worked doors were added in 1931; the ratio of door width to passenger saloon length increased from about 12 per cent. to 27 per cent. in the 17-year period. The Tube stock introduced in 1938 did not sacrifice any passenger space for control equipment.

Frames and trucks are made specially robust on motorcoaches to take driving strains. A power of up to 250 or 300 h.p. is usual for a modern series-wound motor with interpoles. Roller-bearing armatures are customary.

Twelve to twenty notch series parallel control with bridge transition is almost general. Field weakening by field tapping or shunting is frequently used to obtain high free-running speeds on outer suburban sections of line.

Direct control, in which current for all motors on the train was taken through one main manually-operated controller, was soon superseded by various forms of indirect control in which the driver's master controller operated the motor-control gear. In some cases a power-operated drum or cam-contactor controller for each set of motors was used, but more usually the current was handled by electromagnetic or electropneumatic contactors, whose order of operation was determined by the master controller.

The successive steps of a control sequence may follow automatically, instead of depending on successive notch-to-notch movements of a master controller, if one motor circuit contains a current relay, which closes when the motor current is below the predetermined minimum accelerating current, thus causing operation of the next step in the control sequence. This is achieved in several ways:

- (a) One notch forward of a power-operated main controller;
- (b) One notch forward of a power-operated secondary master controller, the contacts on which determine the order of contactor operation;
- (c) By interlocks and auxiliary contacts in the case of contactor control, in which, on closing, each contactor transfers its operating coil to a retaining wire and connects that of the next contactor to an actuating wire which is periodically energised by successive closings of the current relay.

The need for quick and accurate stopping in intensive suburban service led to the adoption of the electropneumatic brake which enables brake application and release to be synchronised throughout

the train, as well as partial release to be effected. To this brake is usually added a deceleration controller in which a brake release circuit is made by a mercury decelerometer, *via* a relay, when the deceleration of the train exceeds a predetermined maximum, above which the wheels may skid.

Automatic couplings, of which there are several types, are advisable for rapid splitting and making of trains. Control and other electrical connections are made by jumper cables with multi-pin plugs, which enter suitable sockets on the car ends. Modern designs obviate the festooning of car ends common on old equipment. One of the latest couplers is the "Wedgelock," which is self-centring, connects on engagement, and is locked, making all air and electrical connections by pressing a button in an adjacent driving cab.

In conclusion, possible future trends are suggested. There is much scope on most railways for station improvement. Track capacity might be slightly increased by the adoption of fully automatic terminal and junction working. If further car capacity is required an increased stand/sit ratio may be advisable. To obtain increased deceleration tramway-type magnetic track brakes will probably be used. The future trend of distribution of an urban population will determine whether developments are towards higher-speed suburban or more intensive city services.

FRIBOURG-MORAT-ANET LINE.—It has been decided by the recently-formed Compagnie du Chemin de fer Fribourgeois Gryère-Fribourg-Morat to convert from third rail to overhead working its Fribourg-Morat-Anet standard-gauge electrified line. The work is to be taken in hand shortly and may be complete by the end of next year.

SWEDISH ELECTRIFICATION PROPOSALS.—The Swedish Minister of Transport has announced that proposals are to be submitted shortly to the Riksdag concerning the electrification of the Lund—Kävlinge—Landskrona (20 miles) and Landskrona—Billeberga (7 miles) lines of the State Railways. Costs are estimated at about kr. 5,500,000. The Railway Board has suggested that the conversion of the Stockholm-Tillberg-Köping line (about 100 miles) be proposed also to the Riksdag. The cost is estimated at kr. 28,800,000. It is believed that the work on this line, if commenced this year, could be completed by 1946 or 1947.

* Abstract of a paper delivered before the London Students' Section of the Institution of Electrical Engineers, on April 3, by Mr. B. J. Prigmore, B.A., Grad.I.E.E.

British-Built 4-4-0s in Japan

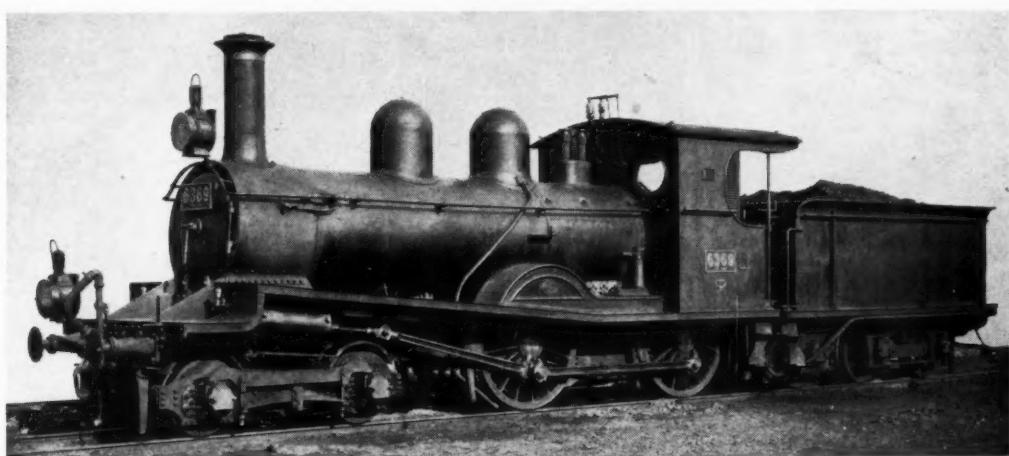
British locomotive builders supplied most of the locomotives for the early development of railways in Japan

IT was not until June 12, 1872, that the first railway in Japan—a part of the line from Tokyo to Yokohama—was opened by the Mikado, and for at least the next thirty or forty years the majority of the locomotives used in Japan were obtained from Great Britain. The

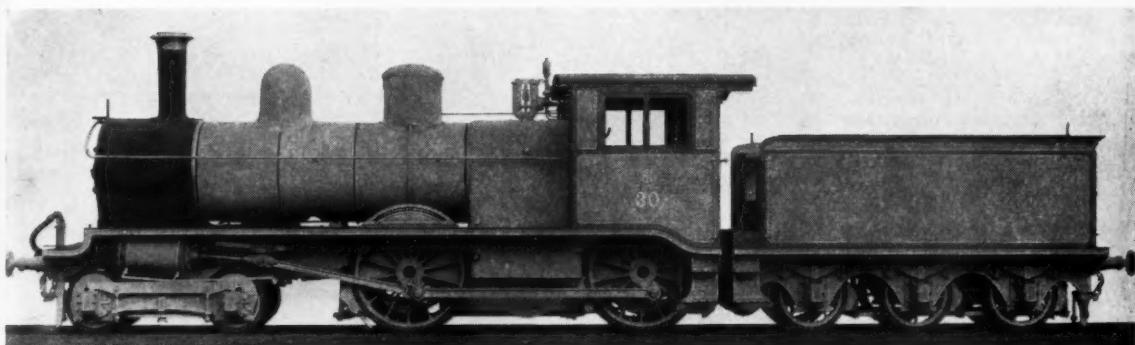
weight of 39 tons; a capacious bogie tender was provided, accommodating 3,000 gal. of water and 7 tons of coal, and weighing 30½ tons. The engine illustrated was, however, a smaller machine weighing only 32½ tons; it had 5-ft. coupled wheels, 16-in. x 24-in. cylinders,

it became impossible to continue the British supply of locomotives.

The second illustration is of a smart 4-4-0 type delivered by Beyer, Peacock & Company to the Tōbu Railway in Japan in 1914. It was somewhat similar in dimensions to the engines already mentioned, with 16-in. x 22-in. cylinders, 5-ft. driving wheels, 996 sq. ft. of heating surface, 17 sq. ft. of firegrate, 160 lb. pressure, and a weight in working order of 34½ tons, or 58½ tons with tender. It will be noticed from the illustration that the locomotive has a horizontal



Class "6350" 4-4-0 locomotive built by Dübs & Company and used in the express service on the Tokaido line at the beginning of Japanese state railway operations



4-4-0 locomotive built by Beyer Peacock & Co. Ltd. and delivered to the Tōbu Railway in 1914

firm securing most of the locomotive contracts was Dübs & Company (now a part of the North British Locomotive Company).

The first of the photographs reproduced above is typical of a large number of outside cylinder 4-4-0 tender engines sent out to Japan, all, of course, designed for the 3 ft. 6 in. gauge. Some of these had horizontal cylinders and straight running plates, but from 1900 onwards a type was introduced, like the engine illustrated, with inclined cylinders and valve-chests above, and the curious design of running-plate shown, horizontal from the cab to the driving wheels, and then inclined upwards to the front end to clear the cylinders. The larger 4-4-0s had 4-ft. 6-in. driving wheels; 17-in. x 23-in. cylinders; 996 sq. ft. of heating surface; a grate area of 26 sq. ft.; and a

952 sq. ft. of heating surface (of which Drummond cross water-tubes in the firebox contributed 72 sq. ft.), and a firegrate area of only 14 sq. ft.; the curious six-wheel tender, with a fixed front axle and rear bogie (a Japanese speciality), held 2,000 gal. of water and 3½ tons of coal and weighed when fully loaded 21½ tons.

This latter was part of the equipment of some Dübs-built 2-6-0 side tanks, which had a tender attached instead of a rear bunker. The sand dome, between the steam dome and safety-valves, and the number-plate on the smoke-box door, were later Japanese additions, while in course of time the Drummond cross water-tubes in the firebox were removed, although 4-4-0 engines so fitted were still being supplied by American builders during the 1914-1918 war years, when

raised running plate from the cab to the cylinders.

AGREED CHARGES.—Applications have been made to the Railway Rates Tribunal for the approval of 62 further agreed charges under the provisions of Section 37 of the Road & Rail Traffic Act, 1933. Notices of objection must be filed on or before June 13.

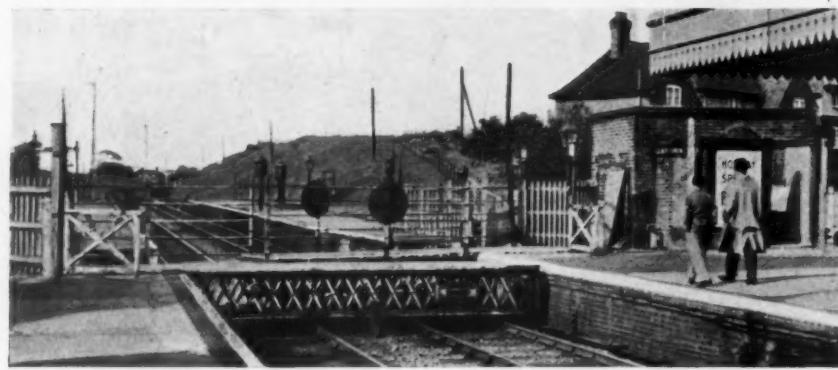
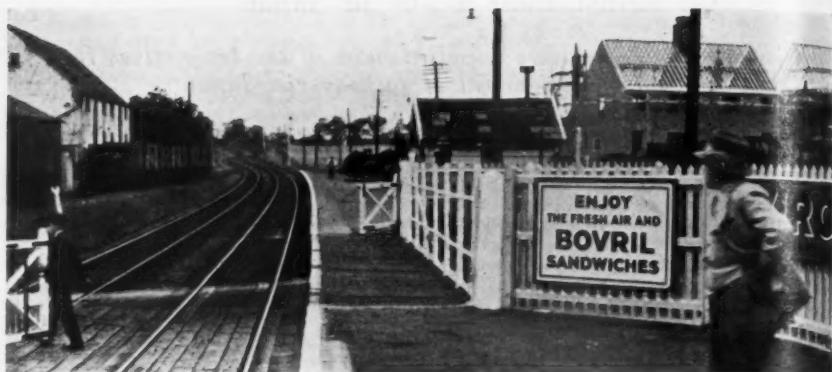
TRANSPORT IN NICARAGUA.—Highway construction in Nicaragua is reported to be making considerable progress. The Pacific Railway Company (of which we published a map and brief details in our issue of April 30, 1943, page 435), is in charge of the work on the highway from the end of its Leon-Sauce branch, which is to extend from the Sauce railhead to Esteli on the Pan-American Highway, a distance of some 20 miles.

MOVABLE PLATFORMS

Movable section of platform over level crossing at Saxmundham, L.N.E.R.

Photo

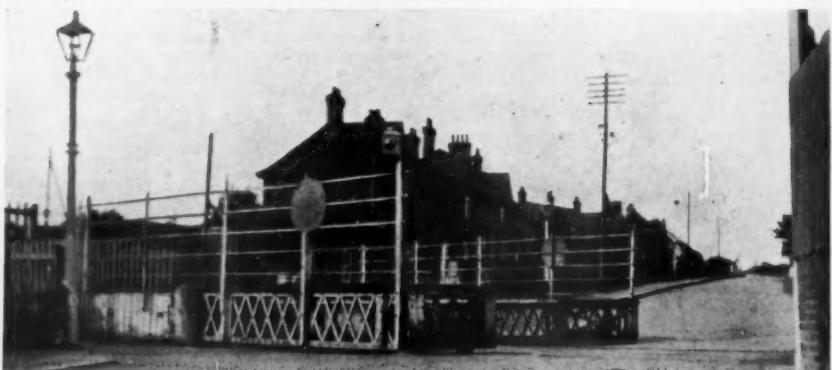
[Dr. R. O. Brooks]



Movable platform sections at Halesworth, L.N.E.R., swung across the line, leaving the road level crossing open

Photo

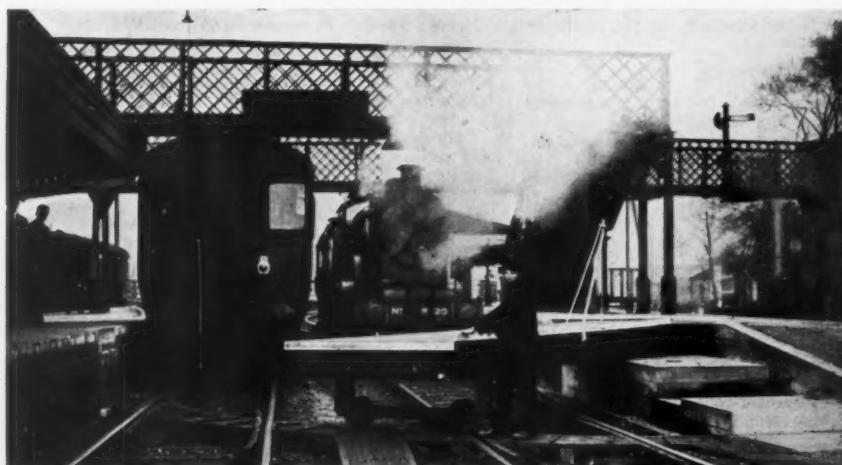
[Dr. R. O. Brooks]



Part of the Halesworth, L.N.E.R., movable platforms closed across the road preparatory to the reception of a train

Photo

[Rev. David T. Scotland]



Movable platform at Beccles, L.N.E.R., to facilitate the transfer of milk churns across the line. The view was taken in October, 1931

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RAILWAY NEWS SECTION

PERSONAL

Mr. F. A. Pope, Chief Commercial Manager, L.M.S.R., has been appointed to the post of Director of the Port of Calcutta, which the Government of India has created to co-ordinate and control the various authorities concerned with the operation of the port. The services of Mr. Pope, who recently left the United Kingdom to take up his new duties, have been lent temporarily by the L.M.S.R. to the Government of India.

The late Mr. Robert Holland-Martin, who was Chairman of the Southern Railway Company, left £157,654.

Sir John Forster, who has been a member since its inception of the National Arbitration Tribunal, has succeeded Lord Simonds as Chairman of that body. Sir John Forster is Chairman of the Railway Staff National Tribunal.

Mr. H. E. Stacey, Crown Counsel in the Kenya Legal Department, has been appointed Legal Adviser to the Kenya & Uganda Railways & Harbours, in succession to the late Mr. H. F. Hawes.

Sir Harold Clapp has been appointed by the Commonwealth Government to submit a detailed plan for the unification of Australian railway gauges. He has been relieved of his duties as Director-General of Land Transport to carry out this task.

Dr. Andrew McCance, a Director of Colvilles Limited, has been appointed Deputy-Chairman & Joint Managing Director.

Major James Keith has been appointed a Director of the Midland Bank Limited and the Midland Bank Executor & Trustee Co. Ltd., in the place of Mr. A. Hall Wilson, who has resigned in consequence of ill-health. Mr. Hall Wilson continues as Deputy-Chairman of the North of Scotland Bank Limited.

Mr. Robert Kelso, Chairman & Managing Director of the General Steam Navigation Co. Ltd., has been elected President of the Institute of Transport for 1944-45.

The Minister of War Transport has appointed Mr. H. H. Merrett to be a member of the Advisory Committee on Requisitioned Privately-Owned Railway Wagons, and to be Chairman of the sub-committee dealing with repairs, in place of Sir Charles Newton (Chief General Manager, L.N.E.R.), who has resigned. Mr. Merrett has had wide experience in the building and maintenance of railway wagons, and is one of the largest coal exporters in Wales; he is Chairman & Managing Director of Guérét, Llewellyn & Merrett Limited, and Managing Director of Powell Duffryn Associated Collieries Limited and of Powell Duffryn Steam Coal Co. Ltd. In 1932 he published "The Fight for Coal," in which he advocated the transfer of colliery wagons to the railway companies.

Mr. Conrad Gribble, M.Inst.C.E., Assistant Engineer (New Works & Bridges), Southern Railway, who, as recorded in our April 7 issue, has been appointed Deputy Chief Civil Engineer, commenced his railway career as a pupil of the late Mr. William Marriott, then District Engineer & Locomotive Superintendent of the Midland & Great Northern Joint Railway, at Melton Constable. In 1901 Mr. Gribble was Assistant Resident Engineer on the construction of the

the British Engineering Standards Association Sub-Committee on Girder Bridges. He was awarded the Miller Prize of the Institution of Civil Engineers for a paper on automatic signalling in 1903, and he gained a Webb Prize, a Telford Gold Medal and a Telford Premium of that Institution in 1929. He delivered the Institution Lectures to Students during the session 1932-33. During the period 1931-36 Mr. Gribble represented British railways on investigations into the strength of bridges on the Continent carried out by a committee of the International Union of Railways. He has been for the last ten years a member of the Forest Products Board of the Department of Scientific & Industrial Research. In his present appointment Mr. Gribble continues to deal with bridges and new works matters.

Captain T. A. Gore-Browne, Grenadier Guards, the younger son of Colonel Eric Gore-Browne, Chairman of the Southern Railway Company, has been reported missing since February last.

Mr. A. H. Dodd has been appointed Divisional Road Engineer, North Western Area, Ministry of War Transport, in succession to the late Colonel R. Howell Davies.

It is announced in the Supplement to *The London Gazette* of April 28, 1944, that Major R. F. Hindmarsh, M.Inst.C.E., resigns his commission in the Engineer & Railway Staff Corps, May 3, 1944, and retains the rank of Major.

Mr. Charles B. Gilbert, A.R.P. Officer, London Transport, has died after a short illness. He entered the service of the Metropolitan District Railway Company as a clerk in the Superintendent of the Line's office in April, 1906. In 1909, he was transferred to the office of the late Mr. Frank Pick, then Commercial Manager of the Underground Group of Companies. He became Development Officer in 1921; Traffic Officer in 1924; Assistant Commercial Manager in 1926, and General Superintendent (Country Buses) in 1933. In 1937, he became again directly associated with Mr. Pick, Vice-Chairman of the board, to undertake special duties, until his appointment as A.R.P. Officer in June, 1940.

We regret to record the death of Mr. G. A. Dudley, for 25 years District Manager at the Wishaw Works of Thos. W. Ward Limited.

Mr. H. Barnden, who, as recorded in our April 28 issue, has retired from the position of Registrar, Southern Railway Company, entered the Secretary's Office of the former London Brighton & South Coast Railway Company at London Bridge in 1901. After experience in various sections of the office, he was appointed, at the end of 1911, Personal Clerk to the Secretary and Private Secretary to the Chairman. In the latter capacity he served successively the late eighth Earl of Bessborough, the late Mr. C. C. Macrae, and the late Lord Wake-



Photo

Mr. Conrad Gribble

[Lafayette

Appointed Deputy Chief Civil Engineer, Southern Railway

Breydon Viaduct, Great Yarmouth, and the Lowestoft Junction Railway. A year later he became Assistant in the office of the late Mr. W. J. Cudworth, Engineer, Southern Division, North Eastern Railway. In 1915 he was appointed Assistant to the Assistant Engineer (Maintenance), under Mr. C. F. Bengough, Chief Engineer, N.E.R., and in 1922 was appointed Leading & Bridge Assistant to the Chief Engineer. Mr. Gribble joined the Southern Railway as Bridge Assistant to the Chief Engineer in 1927, and shortly afterwards was appointed Assistant Engineer (New Works & Bridges). In 1920 he acted as Chairman of a sub-committee of engineering assistants, appointed by the Railway Engineers' Association to report on loading tables, permissible stresses, and other matters in connection with bridge design; and three years later he was appointed Chief Engineer to the Bridge Stress Committee of the Department of Scientific & Industrial Research. Also while in N.E.R. service he assisted and represented the Chief Engineer on

hurst. After the amalgamation Mr. Barnden was transferred to Waterloo, where he was engaged on board and committee work; in May, 1932, he again became

amalgamated, he became Deputy General Manager (Operating & Mechanical). He was appointed General Manager in 1932. Mr. Head had been President of the

at present District Goods & Passenger Manager, Chester, L.M.S.R., and of Mr. O. Glynne Roberts, who retired at the end of 1940 from the positions of Secre-



Mr. H. Barnden

Registrar, Southern Railway Company, 1939-44



The late Mr. E. W. Head

General Manager, Ceylon Government Railway, 1932-36



The late Captain Ivor Roberts

Marine Superintendent and Harbourmaster, Holyhead, L.M.S.R., 1931-34

Private Secretary to Lord Wakehurst, and in 1934 to the late Mr. Robert Holland-Martin. He was appointed Registrar in January, 1939.

CANADIAN NATIONAL RAILWAYS
Mr. D. V. Gonder, Superintendent of Motive Power & Car Shops, Montreal, has been appointed General Superintendent of Motive Power & Car Equipment, Atlantic Region.

Mr. A. C. Melanson has been appointed Works Manager, Motive Power & Car Shops, Montreal.

Mr. L. H. Bexon, Superintendent, National Railways Munitions Limited, has been appointed Superintendent, Motive Power Shops, Transcona, in succession to Mr. D. E. Mackinnon, promoted Superintendent, Stratford Shops.

Mr. R. D. Garner, Chief Engineer, Central Vermont Railway, has been appointed also Acting General Manager, in succession to Mr. H. A. Carson, who has retired from the position of General Manager, which he has held for over six years. Mr. J. E. O'Donnell has been appointed Assistant Chief Engineer; and Mr. J. C. Boyle becomes Assistant Engineer, in charge of permanent way.

We regret to record the death on February 21, at the age of 67, of Mr. Ernest Wilfred Head, O.B.E., who retired in 1936 from the position of General Manager, Ceylon Government Railway. He received his early engineering training with Alley & MacLellan Limited, Sentinel Works, Glasgow, and gained further experience on the former Great Northern, Midland, and North Eastern Railways. He joined the Ceylon Government Railway in 1902; he was appointed District Locomotive Superintendent in 1905; Assistant Locomotive, Carriage & Wagon Superintendent in 1912; and Locomotive, Carriage & Wagon Superintendent in 1915. On the reorganisation of the Railway Department in 1924, when the Traffic and Locomotive Departments were

Engineering Association of Ceylon, and had acted on several occasions as Chairman of the Railway Advisory Board. He was made O.B.E. in 1936.

We regret to record the death on May 15 of Captain Ivor Roberts, M.B.E., J.P., who retired in 1934 from the position of Marine Superintendent & Harbourmaster, Holyhead, L.M.S.R. He was a son of the late Mr. Owen Roberts, J.P., and was a brother of Mr. R. D. Roberts,



Mr. W. W. Capon
Appointed Stationmaster, Marylebone, L.N.E.R.

tary of the company and Assistant to the President. At the time of his death Captain Roberts was A.R.P. Controller for Anglesey. After serving his apprenticeship in sailing ships in the ownership of William Thomas & Company, Liverpool, Captain Roberts entered the service of the former L.N.W.R. as a junior officer on the Holyhead-Dublin cargo service in 1895. He later was appointed to command in that service, then to command on the Holyhead-Greenore service, and ultimately as Commodore Captain of the Holyhead-Kingstown mail steamers of the L.M.S.R. For his services during the war of 1914-18 he was commended by the Admiralty and was made M.B.E. He was appointed Marine Superintendent, Heysham, L.M.S.R., in 1928, and three years later, Marine Superintendent & Harbourmaster, Holyhead, which post he occupied until his retirement in 1934. In addition to his duties as A.R.P. Controller, Captain Roberts was a Justice of the Peace, a member, and formerly Chairman, of the Anglesey Standing Joint Committee; and Governor of the Holyhead County School.

Mr. James Henderson, who retired recently from the Presidency of the Iron & Steel Institute, has been elected an Honorary Member of the Institute. His successor as President is Mr. Arthur Dorman, who is a Director, among other companies, of Dorman, Long & Co. Ltd.

Mr. W. W. Capon, Stationmaster, Sheffield (Victoria), L.N.E.R., who, as recorded in our March 24 issue, has been appointed Stationmaster, Marylebone, joined the former Great Central Railway in 1910. He became a clerk in the Chief Goods Manager's Office at Marylebone in 1914. Four years after his return from military service in 1919 he joined the Superintendent's Office; and he became Controller at Leicester in 1928. He was appointed Deputy Chief Controller at Nottingham in 1931, and three years later he was made Stationmaster at

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THE RAILWAY GAZETTE

Basford & Bulwell, also in charge of New Basford. In 1936 Mr. Capon was appointed Stationmaster at Nottingham (Victoria), also in charge of Arkwright Street. He became Acting Stationmaster at Sheffield (Victoria) in 1941; his appointment there was made permanent in the same year.

We regret to record the death on May 19, at the age of 66, of Sir William Chamberlain, M.Inst.T., Regional Transport Commissioner, North Western Region. He was appointed Chairman of the Traffic Commissioners for the North Western Area in 1931, before which he was General Manager & Engineer of the Belfast City Tramways & Transport Department. He was President of the Municipal Tramways & Transport Association for 1928-29, and was knighted in 1939.

SOUTH AFRICAN RAILWAYS & HARBOURS
Mr. F. M. Williams, Superintendent (Operating & Commercial), Bloemfontein, has been appointed Superintendent (Commercial & Staff), Johannesburg.

Mr. H. V. Taylor, Superintendent (Operating), East London, has been appointed Superintendent (Operating Research), General Manager's Office, Johannesburg.

Mr. P. S. Coetsee, Secretary, Central Housing Board, Johannesburg, has been appointed Superintendent (Commercial & Staff), Pretoria.

Mr. A. S. Goodbrand, Assistant Superintendent (Commercial & Staff), Durban, has been appointed Superintendent (Commercial & Staff), East London.

Mr. H. Wenning, Assistant Superintendent (Commercial & Staff), Johannesburg, has been appointed Superintendent (Commercial & Staff), Kimberley.

Mr. G. P. Rousseau, Assistant Superintendent (Operating & Commercial), Windhoek, has been appointed Superintendent (Operating), East London.

Mr. W. Heermans, Assistant Superintendent (Operating), Pretoria (temporarily transferred to Bloemfontein), has been appointed Superintendent (Operating), Bloemfontein.

Mr. R. Thomson, Port Goods Superintendent, Port Elizabeth, has been appointed Superintendent (Operating), Port Elizabeth.

Mr. G. J. Krieger, Assistant Production Engineer, Mechanical Department, Pretoria, has been appointed Locomotive Superintendent, East London.

Colonel A. A. Stanford has retired from the position of Chief of Police.

Mr. Herbert Evans, Assistant to the Traffic Manager (Operating), Great Northern Railway (Ireland), who, as recorded in our April 21 issue, has been appointed District Superintendent, Omagh, entered the company's service in 1905. After serving at various stations and gaining experience in all branches of station working, he was appointed to the Goods Manager's Office, Belfast, in 1912. In 1920 he took up duty at the company's headquarters in Dublin as Assistant Staff Clerk, and became Chief Staff Clerk in 1929. Four years later he was appointed Chief Clerk in the District Superintendent's Office, Dublin, and in 1941 he became Chief Trains Inspector. He was appointed Assistant to the Traffic Manager (Operating) in July, 1943. During the past year Mr. Evans has been a member of the departmental committee appointed by the General Manager to formulate proposals for the working of the undertaking during the post-war

period, when the problems common to all transport companies will be for the G.N.R.(I.) unusually complicated, because of its extensive interests on both sides of the Northern Ireland-Eire border. A portrait of Mr. Evans was published in our October 1, 1943, issue.

Mr. D. M. Sinclair, who has been Acting General Manager, as well as Chief Engineer, of the Birmingham & Midland Motor Omnibus Co. Ltd., has been confirmed in that office.

METROPOLITAN-VICKERS ELECTRICAL CO. LTD.

Mr. H. C. Pierson, a Director, has been appointed also General Sales Manager, which position was relinquished by Mr. P. S. Turner on his appointment as a Vice-Chairman of Associated Electrical Industries Limited, and Chairman of the Edison Swan Electric Co. Ltd., Edison Swan Cables Limited, and Ferguson Pailin Limited.

Mr. D. MacArthur, a Director, has been appointed to succeed Mr. Pierson as Manager, Home Sales.

Mr. E. W. Steele has been appointed General Manager of Works.

Mr. W. Symes has been appointed Works Manager, Main Trafford Park Works.

Dr. C. Dannatt has been appointed Assistant to the Chief Electrical Engineer.

Mr. I. R. Cox, Joint Managing Director of Metropolitan-Vickers Electrical Export Co. Ltd., has been elected a Director.

COLONIAL RAILWAY APPOINTMENTS

The Secretary of State for the Colonies recently approved the following appointments:—

Mr. A. Lowe, Locomotive, Carriage & Wagon Superintendent, Jamaica, to be Mechanical Engineer, Jamaica Government Railway.

Mr. W. G. G. Beveridge, Assistant to the Port Manager, Kenya & Uganda Railways & Harbours, to be Assistant to the Port Manager, Palestine.

The Crown Agents for the Colonies recently made the following first class appointments:—

Mr. D. M. Whitbread to be Assistant Locomotive Superintendent, Sierra Leone Government Railways.

Mr. J. G. B. Robertson to be Marine Officer, Tanganyika Government Railways.

Mr. J. H. A. Love to be Administrative Assistant, Palestine Railways.

Due to ill-health, Mr. A. J. Letham has relinquished his position as Acting Chairman of the Staff Board, Victorian Government Railways, which he took over when Mr. D. Cameron was appointed Deputy Director-General of Manpower under the Commonwealth Government. Mr. Letham, who has resumed his previous position as a member of the Railways Classification Board, has been succeeded by Mr. Norman Quail.

Lt.-Colonel H. Wickham Dixon, M.B.E., Royal Engineers, who before the war was Running Shed Foreman, St. Albans, L.M.S.R., has been commanding a Railway Workshops Group, R.E., in the Middle East since October, 1943. Previously he served for two-and-a-half years as Deputy-Director of Transportation (Mechanical), G.H.Q., M.E.F.

We regret to record the death on May 20 of Mr. Joseph Henry Turner,

O.B.E., M.Inst.T., Chairman of the Standing Joint Committee of Road Hauliers' National Organisations.

Mr. M. Birmingham, Director & Secretary of the company, has been elected Deputy-Chairman of Keith Blackman Limited.

INDIAN RAILWAY STAFF CHANGES

Mr. L. H. Swain, Director, Railway Board, was granted seven months' leave preparatory to retirement as from September 18 last.

Mr. R. W. Allum, Deputy General Manager, O.T.R., has been transferred temporarily to the B.A.R. as Engineer-in-Chief (Construction).

Mr. F. E. Musgrave has been confirmed provisionally as Deputy Chief Engineer, B.A.R.

Mr. H. W. Meakins, Chief Transportation Manager, B.A.R., was granted leave preparatory to retirement as from October 9 last.

Mr. F. Thomas has been appointed to officiate as Deputy Controller of Stores, B.C.I.R.

Mr. E. R. Fleeton has been confirmed permanently as Deputy Chief Mechanical Engineer, E.I.R., as from December 5 last.

Mr. S. J. P. Cambridge has been confirmed as a Divisional Superintendent on the E.I.R.

Mr. F. H. Grosvenor, who, as announced in our issue of April 21, has retired from the position of Passenger Manager of the P. & O. after 52 years' service with the company, was entertained by a number of friends and business associates at a luncheon at the Savoy Hotel, London, on Tuesday. The function was organised by Mr. Shirley H. James, Passenger Manager, Pickfords Limited Travel Agency, Mr. B. Russell, West End Passenger Manager, Cunard White Star Line, and Mr. W. Hinde, Thos. Cook & Son. The toast of "Our Guest" was proposed by Mr. E. Huskisson (Thos. Cook & Son Ltd.), Mr. Ben H. Russell (Cunard-White Star Line), Mr. Dennis Handover (Air Services), and Mr. Gilbert Szlumper (Ministry of Supply).

We regret to record the death on May 22, at the age of 70, of Mrs. Ada Marie Muggeridge (*née* Towle), who retired in 1935 from the position of Domestic & Furnishing Assistant to the Controller of L.M.S.R. Hotel Services. She married Major Muggeridge in 1898, and had two daughters, who survive her. She was a sister of Mr. Arthur Towle, at present Controller of L.M.S.R. Hotel Services, and of Sir Francis Towle, formerly Managing Director of Gordon Hotels Limited and past-President of the International Hotel Alliance. During the building of the Midland Hotel, Manchester, she helped her father, the late Sir William Towle, then Manager of the Hotel & Refreshment Department, Midland Railway, with special reference to furnishing and domestic matters. After spending some time abroad she rejoined the Midland Railway in 1922 as Domestic & Furnishing Assistant to Mr. Arthur Towle, with whom she was prominently associated in the unification of the L.M.S.R. hotels in 1925, and with whom she remained until her retirement ten years later. Mrs. Muggeridge was a Member of Council of the Hotel & Restaurant Association, which body made her an honorary life member. She was among the first women to associate themselves with large business enterprises.

May 26, 1944

TRANSPORT SERVICES AND THE WAR—243

London Transport Summer Rail Services

Revised train services for the summer months were introduced on all London Transport lines on Monday last, May 22. The principal feature of the new timetables is the discontinuance of the additional running time allowed during the long-blackout months; otherwise the new services do not represent any material change.

The following changes in the District Line Sunday services affecting Richmond and Wimbledon were introduced on April 30: Between Charing Cross and Richmond, from 1 p.m., trains now run every 10 min. instead of every 20 min.; Wimbledon trains run to High Street, Kensington, instead of to Charing Cross.

Whitsuntide Services in Ireland

The Great Northern Railway (Ireland) has given notice that, in consequence of Government restrictions, the company will be unable to operate additional services during the Whitsuntide holiday period. Passenger tickets have been obtainable in advance at stations from May 12, and passengers travelling by main line trains joining at Dublin, Belfast, and Londonderry have been advised to make timely application at these stations for reservation tickets, issued at a charge of 1s. each.

On Whitsunday and Whitsun Monday, May 28 and 29, the services from Dublin to local stations, Howth, Malahide, Donabate, Skerries, etc., will be operated by railcars, affording limited accommodation for those who must of necessity travel.

Ulster Freight and Livestock Traffic

The Northern Ireland Road Transport Board has issued an official notice, dated May 1 and published in the Belfast press on May 12, to the effect that, in view of the restrictions arising out of further war activities, with consequent interruptions and curtailments on the regular train and boat services of the railways in Great Britain and Northern Ireland, the board will be able to accept freight and livestock traffic destined for ports and places in Great Britain, only as circumstances permit, and then only on the understanding that the board will not be responsible for any delay, damage, or loss which may arise through any such restriction, curtailment, or interruption, whether on the board's services or on the services of any railway or steamship company. The notice is signed by Mr. W. E. Macve, Chief Executive (Operations).

French Rail Service Reductions

From the recent series of statements issued by the Paris and Vichy radios, it would appear that the German occupying authorities are making various temporary cancellations of rail services in France, for limited periods, in connection with their defence works. A considerable number of trains on minor lines was withdrawn between March 6 and March 17, but main-line services were said to be unaffected. Then, an undisclosed number of trains was cancelled from April 24, and it was reported from Spain on April 27 that the German Army had taken over control of all French railways, and had suspended all normal timetables for an indefinite period (see our March 5 issue, page 477). On May 8, the Vichy radio announced that many passenger trains would be suspended in all parts of France from May 15, the date which some German commentators had forecast as that of the Allied invasion. A warning was

issued that civilian passenger traffic would be liable to summary alteration or suspension.

New Norwegian Railway

It is reported that a new standard-gauge 334-mile railway was opened in Norway early last February. It extends from Kristiansand to Audnedal, westward from Kristiansand along the south coast of Norway. At present, traffic is said to be limited to a few trains.

Turkish Air Lines

After the winter suspension, internal air lines have been resumed in Turkey from April 1. The routes now in operation are from Ankara to Istanbul, Izmir, Adana, and Samsun. Five Junkers civil aircraft have recently been supplied by Germany for the Istanbul-Ankara-Adana line. Negotiations are understood to be in progress between Turkey and Roumania for establishing an air service between Istanbul and Bucharest.

Red Army Culture Trains

Long before it is possible to resume normal life in the towns recaptured by the Soviet Army in its great drive to the West, the Red Army Culture Trains follow closely behind the advancing Russians. These trains, decorated with multi-coloured panels and portraits of Russian generals, stand out among the passenger and goods trains. As soon as one makes its appearance, it becomes a cultural centre, attracting a steady stream of townsmen, as well as army men. Red Army officers and soldiers begin to visit the train from 8 a.m. They come both individually and in groups to ask for books and for tickets to concerts or cinema shows; they attend lectures on military subjects or on general questions; they linger before the maps on which a red thread indicates the line of the front.

The day the Red Army Culture Train arrived in Briansk it gave a literary broadcast on "The Heroic Past of the Russian People." The platform was crowded with soldiers, railway workers, and local inhabitants. The grand aria of Ivan Susanin, from Glinka's famous opera, floated over the rubble of the houses and the ruins of the station buildings. So far there is neither theatre, cinema, concert hall, nor club in Briansk. The Germans destroyed them all, and

there has not yet been time to rebuild them, so the arrival of the train was a real holiday for everybody. A motorbus took the ensemble of artistes to visit the Briansk garrison. The concert included a reading by Maria Mikhailova, an actress, of Maxim Gorky's fairy tale "In a Besieged City," as well as Ukrainian songs and acrobatic dances.

Russian Commissar for Rail Transport

In view of the outstanding performance of the Russian railways in the successful winter expulsion of the German and Roumanian invaders from most Soviet territory, it is of interest to record that the head of the railways administration is Mr. Lazar Moiseevich Kaganovich, Commissar for Railway Transport. He is one of the eight persons constituting the State Defence Council of the U.S.S.R., which was established on June 30, 1941, and in its administrative functions can be compared with the British War Cabinet. Mr. Kaganovich is also one of the Deputy Chairmen of the U.S.S.R. Council of People's Commissars, which is the highest executive and administrative authority in the Soviet Union, and in this respect exercises functions similar to those of the British Cabinet. The Chairman of both the State Defence Council and also the U.S.S.R. Council of People's Commissars is Mr. Josif Vissarionovich Stalin.

Canadian Traffic Increases

In an appeal to Canadians to refrain from unnecessary travel, and to curtail conventions, trade shows, and other gatherings, Mr. T. C. Lockwood, Transport Controller, stated recently that, with only a fractional increase in equipment, the Canadian Railways were handling traffics many times in excess of those of 1939. The volume of freight traffic was up 104 per cent., and passenger traffic more than 265 per cent.

The Inter-American Highway

Arrangements were completed last March for the resumption of work on the Inter-American Highway in Honduras and northern Costa Rica, with the assistance of the United States Public Roads Administration. This work will assist in relieving the unemployment caused in the two republics when United States Army Engineers ceased road building operations on October 31 of last year, a matter to which we have referred previously. The Inter-American Highway is the Central American section of the Pan-American Highway.



Sevastopol railway station after being wrecked by the retreating Germans. Picture transmitted by radio of a photo by S. Gurary of the Sib Photo Service

Indian Railway Problems

The presidential address at the annual general meeting of the Punjab Engineering Congress was given by Sir Arthur Griffin, General Manager of the North Western Railway of India, in the course of which he referred to engineering developments on, and some problems of, the railways, mainly the N.W.R., during the last ten years, and surveyed the future. He first laid stress on the anxiety caused by the recent serious floods, and mentioned in particular the risk of calamity caused by an embayment of the Indus just north of Rohri bringing the river right alongside the main railway bank, which had to be protected by heavily-pitched aprons, on the Bell bund principle. He felt it necessary to stress the fact that a railway embankment was not a bund; it was designed to carry traffic and was provided with water-way normally adequate to pass any expected flood or spill water. The N.W.R. was adopting two safety measures: for some miles north-east of Rohri the up and down main lines were being resited well away from the river; and a re-alignment north-west of Rohri and Sukkur was being carried out.

Turning to the mechanical side, Sir Arthur Griffin said that in recent years great attention had been paid to the improvement of the standard of maintenance of locomotives and to providing the necessary modern equipment. Engine sheds had been modernised, but the exceptional advance in the standard of maintenance was primarily due to a change in organisation, which had introduced a system whereby trouble was anticipated to prevent out-of-course stoppages and repairs. He referred to the "scheduling system," which involved a series of repair schedules based on mileage under which particular items, according to the rate of wear and so on, were examined, repaired or replaced as necessary. On completion of each mileage period (each class of schedule had a mileage attached to it), certain specified items were given attention, whether or not they had given trouble. A comprehensive series of scheduling charts was maintained at all engine sheds, on which was shown the position in respect of every engine—schedules carried out, and when due; that served also for planning ahead for repairs.

Due largely to the nature of the country traversed by the N.W.R., the main source of trouble was the heating of bearings, particularly of axle-boxes. The causes had been under examination for some time, and designs had been modified and other measures taken. That the result had been satisfactory would be appreciated from the fact that the average mileage a locomotive hot axle-box had risen from 7,000 in 1939 to about 30,000 in 1943. The period during which a locomotive remained in service between general heavy repairs, which were carried out in the main workshops at Lahore, was governed by the boiler. Locomotives with new boilers usually completed 150,000 miles before shopping, after which they were certified for 100,000 miles; but that mileage depended on the water supply of the section concerned. The N.W.R. had in certain sections, mainly between Lahore and Karachi, extremely bad water, and it had been decided, after experiment, to install a complete system of water conditioning between Karachi and Lahore and from Rohri to Sibi. The base-exchange system, which produced water of zero hardness, had been adopted. Briefly, a base-exchange plant consisted

of a large drum containing "zeolites," a patented form of sodium alumina silicate. The water passed through a pressure filter and then through that material, and yielded up its content of lime and magnesia salts, which were exchanged at once for a corresponding quantity of sodium salts. Periodical regeneration of the "zeolites" was necessary, which consisted simply in the rapid passing of a solution of sodium chloride through the bed, when the reverse process took place.

Turning to the future, Sir Arthur Griffin said that he looked for more efficient operation and a saving in locomotive requirements with longer runs. He visualised passenger-engine runs without change between Lahore and Karachi (750 miles). Referring to the Ganz diesel railcars introduced to meet severe competition from road services before the war, he said that, unfortunately, the units were of Continental make and at first had given trouble. They had had to be withdrawn from service and considerable modifications made. Their subsequent performance, although perhaps subject to criticism in respect of the percentage of units actually in service at any one time, had been outstanding. The service had

been re-introduced in October, 1940, and in three years a four-car service had run 1,043,122 miles. The mileage a failure in traffic had been 173,854; and the cost a car-mile had decreased to 12.567 annas, despite the great increase in the cost of fuel, lubricant, spare parts and wages. The mileage for service overhauls, originally fixed by the makers at about 20,000, had increased to some 40,000. He had little doubt that an extension of the use of self-contained units would be necessary after the war, but he emphasised the need for a wise selection both of type and source of manufacture. Both diesel with fluid flywheel, and diesel-electric engines had proved eminently successful elsewhere. Of the former, he might quote the case of those on the Nizam's State Railway: they had each two 100-h.p. Gardner engines with fluid flywheels, and in four years had never had a failure. Their overhauls at 20,000 and 40,000 miles took two days only, and at 60,000 miles, a week.

In conclusion, Sir Arthur Griffin touched on wartime difficulties, and said that, when the time came for its release, the story of his railway would be impressive.

Midland Railway Co. of Western Australia Ltd. Annual Meeting

The ordinary general meeting of the Midland Railway Co. of Western Australia Ltd. was held on May 17 at Winchester House, Old Broad Street, London, E.C.

Mr. W. Sandford Poole, Chairman of the company, presided.

The Secretary, Mr. John S. Lewis, having read the notice convening the meeting and the auditors' report,

The Chairman said: The gross traffic receipts of the railway for the year ended June 30, 1943, amounted to £392,954, an increase of £139,419 over those of the previous year. Working expenses increased by £42,044 only. The tonnage of wheat carried was some 50 per cent. less than in the previous year. Because of shortage of labour and available materials expenditure on renewals amounted to £44,553 only, as compared with £50,747 for the year to June 30, 1942. The heavy strain which the greatly increased traffics have placed on the rolling stock and track naturally calls for greater outlay on renewals and replacements, but under existing conditions it has not been possible to do all it was wished to do in that direction. In view, therefore, of the heavy expenditure which can be foreseen when times become more normal, the directors have deemed it prudent to set aside £35,447 as a provision for deferred renewals.

An amount of £80,000 has been provided for British and Australian taxation. This figure has been calculated by reference to the profits of the year under review, after taking credit for reliefs available from previous years, and although it is hoped that the figure of £80,000 will be adequate to meet the tax liabilities when they have been ascertained, the complexities of the position, particularly in regard to Australian taxation, make it difficult to estimate accurately the liabilities under this head.

The tonnage of goods and livestock hauled amounted to 179,018, an increase of 18,256 tons, as compared with last year, while passenger journeys totalled 165,135, as against 76,332 in the 1941-42

period. In this connection it is perhaps as well to mention that the increases gained during the period now under review were almost entirely due to the activity of the defence services operating in the territory served by the company's railway. We are very proud to know that our railway has played such a useful part in the measures taken for the defence of the Australian Commonwealth, and in frustrating the ambitions of our enemies.

The increase in working expenses, £42,044, previously mentioned, was principally due to the running of 100,614 additional train-miles to transport, 88,803 more passengers, and 18,256 extra tons of goods and livestock.

Latest advices show that the gross receipts of the railway for the nine months ended March 31 last totalled £270,533, as compared with £286,570 for the corresponding period of the previous year. Working expenses are considerably higher.

At our meeting in April, 1943, I reported that we had recently appointed Mr. David W. Brisbane General Manager, a position which had remained unfilled since the death of Mr. J. J. Poynton. Mr. Brisbane is giving the business of the company close attention, and the benefit of his wide experience in railway administration. In view of the increased traffic which has passed over the company's line during the year, constituting a record in the history of the company, the conduct of its business has been no easy matter. The directors recognise the heavy strain necessarily put on the staff, and they desire to record their appreciation and to express their thanks to him as General Manager, to Mr. Drake, the General Superintendent of the railway, and the whole staff, and all other employees for their loyal and good service during the past year. I also desire to express to Mr. H. B. Jackson, our local director, the directors' sincere thanks for his watchful care and advice regarding the company's affairs.

The report and accounts were unanimously adopted.

Soviet Railway Workers in Central Asia

By S. Smugly

The railways of Central Asia have acquired exceptional importance during the war. In 1941, these lines carried large numbers of persons evacuated from the western regions of Russia when they were threatened by the German invasion, and trains loaded with machinery and equipment for the evacuated factories and mills. On the other hand, the stream of ammunition, guns, and tanks from the eastern regions to the front increased month by month. The railways in Central Asia were able to cope with this transport situation only because of the hard and intelligent work put in by the Russian, Uzbek, Kazakh, Tatar, and Turkmenian locomotive drivers and station workers, of which the following are examples.

In Samarkand, for instance, two train dispatchers evolved measures which speeded up by 50 per cent. the goods trains in their section carrying war material. Some of these now run at express passenger train speeds.

"COMBINED" LOADING

In wartime, by reason of enormously increased turnover, there is naturally a greater demand for goods vehicles in Russia, as in every other country. In the endeavour to achieve the greatest economy in the use of box cars, flat wagons have been used on the Tashkent Railway for carrying many kinds of goods for which heretofore they have been considered unsuitable. The question arose as to how to preserve from damage by rain and moisture such goods carried in this way. On the initiative of a Tatar stationmaster of Kokand, "combined" loading was introduced—that is, covering one kind of goods by another. For instance, dried beets were covered with bales of raw cotton and fibre. This method proved very effective and has since been applied on other southern railways. It has resulted in making available many box cars for essential war purposes, and has expedited considerably the dispatch of important raw material foodstuffs and agricultural

Two women employed as weighers at Charju Station on the Ashkhabad Railway decided to endeavour to increase the carrying capacity of flat wagons, and, on their suggestion, shipments of cotton seed are now rammed down while being loaded. This simple method has increased the load of every vehicle by 1 to $1\frac{1}{2}$ tons. Rationalisation in loading oil-cake has also produced excellent results, and, at many stations, from 18 to 20 tons are now loaded on flat wagons, instead of the nine tons hitherto carried.

LOCOMOTIVE MANAGEMENT

LOCOMOTIVE MANAGEMENT

It is not only the station workers who are striving to speed up goods traffic. Locomotive drivers on the Central Asian railways, following the example of the foremost among their Russian colleagues, are competing with one another to achieve fast runs. To reduce the delay caused by engines stopping to take on water, the drivers have shown considerable care in handling their locomotives, so that the number of such stops can be reduced to the minimum. Some employees of the Central Asian railways managed to run their engines for 1,000 km. (620 miles) before taking in a fresh supply of water. The application of this care to all the railways of Central Asia has advanced the handling of goods trains by tens of thousands of hours.

Another interesting example of staff co-operation is provided by the "Luninite Movement" among engine drivers, which has now spread to the main railways in Central Asia. It takes its name from Nikolai Lunin, a Siberian driver, who introduced radical changes in the working of his locomotive. It had been the practice, after a run, for the engine to be sent to a depot for overhaul, but Lunin and his engine crew, acquired sufficient mechanical skill to effect running repairs to their engine themselves. Knowing all the peculiarities of their particular locomotive, they have taken care to obviate many engine troubles while in service. By careful attention to detail, they have extended the period of service of their engine, and saved fuel, materials, and spare parts. Many followers of this Russian engine driver have come to the fore on the Tashkent, Ashkhabad, Turkestan, Siberian, and other railways. A senior engine driver at Kyzylorda Station, and his assistant, by applying Lunin's methods, recently saved 20 tons of coal in one month, and two others beat this by saving 30 tons.

Locomotive drivers, shunters, weighers and train dispatchers are among the many classes of railway workers, each of whom feels that he has an important duty to perform. Each tries to show initiative and to introduce improvements for the better working of Soviet railway transport as a whole.

Staff and Labour Matters

Engineering Wages

The National Arbitration Tribunal has issued its award (No. 555) on the claim of the trade unions represented by the National Engineering Joint Trades Movement for an increase of 10s. a week on the base rates to both time and piece-workers in the engineering industry. The parties were heard by the Tribunal on May 10 and the award says that statements were made and documents submitted as to: the minimum inclusive rates at present operative for the different classes of employees; increases in these rates since the war; the extent to which employees are in fact paid above the minimum; a comparison of the minimum hourly rates for skilled engineering employees with the hourly rates for employees in other industries; the average earnings of adult male employees in the various sections of the engineering industry in July, 1943, compared with those in October, 1938; the corresponding figures for the other principal industries; the course of the changes over the war years in production in the industry and in the profits of the industry; the estimated cost of granting the claim; the question of the effect of wage increases on inflation; the absence of any fall in earnings or of any material change in the official cost-of-living index figure since Award No. 326 was made in March, 1943; the question of the extent to which the cost-of-living index figure correctly reflects changes in the actual cost of living; various estimates of the pre-war value of present wage rates, having regard to rises in prices; the estimated average percentage of the employees' income which is represented by income tax payable; and the anticipated effect on the future of the industry of the wage position of the employees in the industry.

The Tribunal awards that the existing

national bonus be increased in the case of all adult male employees by 4s. a week, and in the case of non-adult male employees by proportions of this amount, determined in accordance with the practice of the industry.

The national bonus payable in the Engineering industry, after giving effect to the increase awarded by the Tribunal, is 25s. 6d. a week for time-workers and 17s. 6d. for employees on systems of payment by results.

Electricity Supply Wages

The Industrial Court has recently issued its decision (No. 1,961) on a claim by the employees' side of the National Joint Industrial Council for the Electricity Supply Industry for an increase of 2d. an hour in the wages rates of all employees covered by the agreement made by the national and district councils for the Electricity Supply Industry.

In support of the claim, it was submitted by the trade unions' side of the Council that the supply undertakings are well able to pay in full the amount claimed; that the work of those to whom the claim relates is of the utmost national importance and ranks equally with the work of persons employed in the manufacture of munitions of war and with those in the coal mining, transport, agricultural and other comparable industries. Reference was also made to the restrictive effect of the Essential Work Order which had been applied to the industry. As to the general advances in wage rates which had been granted since the outbreak of war it was contended that these compare unfavourably with those granted in other industries, and evidence in support of this contention was put before the Court. As to the earnings of the employees concerned attention was directed to an official analysis of hours and earnings in various industries which showed that in a large number of industries the earnings were higher than in the electricity supply industry. The increase in the cost of living due to the war was not, it was urged, correctly represented by the official cost-of-living index number, and the advances which had been granted were quite inadequate to meet the needs of the employees concerned, particularly those in receipt of the lower rates of wages.

The claim was opposed by the employers' side of the Council, on whose behalf it was submitted that in considering the advance claimed, the measure of comparison is what is the total time rate paid in the electricity supply industry as compared with the total time rate in other trades and industries. Evidence as to the changes in time rates showing the general level and the level in the electricity supply industry between 1914 and 1939; the numbers employed in the electricity supply industry as compared with other industries and the total time rates, including war advances, in the electricity supply industry as compared with other industries, was placed before the Court. It was submitted that in general wage rates in the electricity supply industry compared favourably with those in other industries, both in total and as regards the changes which have taken place since September, 1939. The advances granted in the industry since that date had amounted to 50 per cent. of the average time rates as against an increase of 29 per cent. in the general cost of living as shown by the Ministry of Labour & National Service index number which figure, it was stated, forms the basis of calculation in many industries for regulating wages in accordance with changes in the cost of living.

Having regard to all these considera-

tions, it was submitted that the claim made was not justified. The Court awards an increase of 1d. an hour in the wage rates of the employees covered by the claim, and this has the effect of making a total advance since September, 1939, of 6d. an hour.

Parliamentary Notes

L.N.E.R. Bill

The London & North Eastern Railway Bill was reported with amendments to the House of Lords on May 16.

L.M.S.R. Bill

The London Midland & Scottish Railway Bill was reported to the House of Lords from the Select Committee with amendments on May 17.

L.M.S.R. (Canals) Bill

The London Midland & Scottish Railway (Canals) Bill was reported from the Select Committee with amendments to the House of Lords on May 17.

Questions in Parliament

Future Use of Canals

Mr. T. H. Hewlett (Manchester Exchange—C.) on May 17 asked the Parliamentary Secretary to the Ministry of War Transport whether he had yet decided on a policy concerning the future use of canals in the North of England which had been discarded by the railway companies hitherto controlling them.

Mr. P. J. Noel-Baker (Parliamentary Secretary, Ministry of War Transport): If Mr. Hewlett is referring to the canals mentioned in the London, Midland & Scottish Railway (Canals) Bill now before Parliament, I would remind him that, if in due course it is sent to a Select Committee of this House, it may be the subject of a report by the Minister of War Transport. In these circumstances, I can make no statement on the subject of the Bill at the present stage. If, however, Mr. Hewlett has other canals in mind, perhaps he will be good enough to let me know.

Mr. A. Edwards (Middlesbrough East—Lab.): In view of the fact that these canals have been allowed to get into serious disrepair and are no longer an asset to the railway companies but a liability, could not the Ministry of War Transport transfer them to the State at a nominal charge?

Mr. Noel-Baker: Each case varies. In some places I think there is no economic future for the canals, but in other places there may be.

Public Service Vehicles

Mr. W. W. Wakefield (Swindon—C.) on May 17 asked the Parliamentary Secretary to the Ministry of War Transport if he was aware of the hindrance to export trade due to S.R. & O. 1941, No. 398, Motor Vehicles (Construction & Use) Regulations, and what steps he was proposing to take so that this handicap to manufacturers engaged in the export trade might be removed.

Mr. Noel-Baker: If I have rightly understood Mr. Wakefield's question, he desires that the limits at present imposed on the size of public service vehicles should be relaxed. I have received representations on the point from the organisations of manufacturers and operators which are principally concerned, and, as I said in the debate on May 5, it is now under consideration.

Mr. Wakefield: Will the Parliamentary Secretary expedite the decision so that

manufacturers may be in the best possible position to export as soon as hostilities cease?

Mr. Noel-Baker: Yes, Sir, I will do my best to expedite the decision, but Mr. Wakefield will realise that many different factors are involved.

Severn Barrage Scheme

Colonel Arthur Evans (Cardiff South—C.) on May 16 asked the Minister of Fuel & Power if he had now considered the Report of the Technical Committee appointed to examine the conclusions of the Severn Barrage Committee; and whether he was yet in a position to make a statement to the House.

Mr. Tom Smith (Joint Parliamentary Secretary, Ministry of Fuel & Power): I have nothing to add to the statement on this matter which the Minister of Fuel & Power made on May 2 in reply to a question by Mr. Ellis Smith (Stoke—Lab.).

Colonel Evans: Could the Parliamentary Secretary give any indication to the House of how long it will take to furnish the information?

Mr. Smith: Yes, Sir, the Minister of Fuel & Power told Mr. Ellis Smith that he was treating this matter as one of urgency.

Aircraft Production

Captain L. F. Pluge (Chatham—C.) on May 11 asked the Minister of Aircraft Production whether the output of Messrs. Short Brothers had shown an increase over the preceding 12 months of 69 per cent. based on financial returns or on aircraft produced.

Mr. A. T. Lennox-Boyd (Parliamentary

Secretary, Ministry of Aircraft Production): The calculation of the increase was based on numbers of aircraft delivered.

Captain Pluge asked if, since the change of directors at Short Brothers, a change had also taken place in the type of aircraft produced, namely, from mass production of ships to prototype machines or *vice-versa*?

Mr. Lennox-Boyd: No, Sir, that would not be a fair description.

Mr. W. W. Wakefield (Swindon—C.): Is it not a fact that Messrs. Short were experts in specialist design and construction of flying boats?

Mr. Lennox-Boyd: That is a different question.

Civil Aviation

Mr. Edgar Granville (Eye—Ind.) on May 16 asked the Prime Minister if he would now consider the appointment of a Minister for civil aviation or without portfolio to answer for this increasingly important subject of the Government's post-war plans in the House of Commons.

The Prime Minister: No, Sir. Responsibility for civil aviation rests with the Secretary of State for Air under statutory authority. The Secretary of State for Air will therefore continue to answer for his Department. Responsibility for the co-ordination of Government policy under the War Cabinet rests with the C.A.T. Committee, of which the Lord Privy Seal is Chairman and the Secretary of State for Air a member. I should like to say in giving this piece of information of a Cabinet Committee it must not be taken as a precedent.

Rates of Exchange

A variety of financial statistics relating to railways operating overseas is normally recorded in the currency of the country concerned. This applies not only to such figures as those which form the basis of the various traffic tables given on other pages of this issue, but also to figures relating to expenditures of various kinds, which form the subject of messages

received from our correspondents and published in Overseas Railway Affairs, and so forth.

For the convenience of our readers we reproduce below a table which shows the currency of the principal countries, and the method of quotation and par rate, and, where available, the London exchange rate at September 1, 1939, the latest obtainable before the outbreak of the present war.

CURRENCY RATES OF EXCHANGE

Country	Currency	Method of quotation and par rate	London Exchange Rate at September 1, 1939
Argentina	100 Centavos	= 1 Peso	11.45
Belgian Congo	100 Centimes	= 1 Franc	175
Brazil	100 Centavos	= 1 Cruzeiro	5.90d.
Bulgaria	100 Stotinki	= 1 Leva	673.66
Chile	100 Cents	= 1 Peso	40
Czechoslovakia	100 Heller	= 1 Crown	164.25
Denmark	100 Ore	= 1 Krone	18.16
Egypt	1,000 Milliemes	= 1 Piastre	97.50
Finland	100 Penni	= 1 Markka	18.16
France	100 Centimes	= 1 Franc	193.23
Germany	100 Reichspfennig	= 1 Reichsmark	124.21
Greece	100 Lepta	= 1 Drachma	20.43
Hungary	100 Filler	= 1 Pengö	375
India	16 Annas	= 1 Rupee	27.82
Italy	100 Centesimi	= 1 Lira	1s. 6d.
Japan	100 Sen	= 1 Yen	92.46
Jugoslavia	100 Paros	= 1 Dinar	24.58d.
Latvia	100 Santims	= 1 Lat	276.32
Lithuania	100 Centas	= 1 Litas	25.22
Mexico	100 Centavos	= 1 Peso	48.66
Netherlands West Indies	100 Cents	= 1 Florin	9.76
Norway	100 Ore	= 1 Krone	12.11
Peru	100 Cents	= 1 Sol	18.16
Poland	100 Gross	= 1 Zloty	17.38
Portugal	100 Centavos	= 1 Escudo	43.38
Roumania	100 Bani	= 1 Leu	110
Spain	100 Centimos	= 1 Peseta	813.60
Sweden	100 Ore	= 1 Krona	25.22
Switzerland	100 Rappen	= 1 Franc	18.16
Turkey	40 Para	= 1 Piastre	25.22
United States	100 Cents	= 1 Dollar	4.866
Uruguay	100 Centimos	= 1 Peso	4s. 3d.

* 100 Piastres = £E or £T.

Notes and News

Gloucester Harbour Charges.—The Minister of War Transport on May 10 made the Gloucester Harbour (Increase of Charges) Order, 1944.

Leopoldina Railway Co. Ltd.—The company will on July 1 pay to the holders of its 4 per cent. debenture stock on the register on May 27, interest at 6 per cent. (actual) less income tax, in respect of the half-years ended December 31, 1940, and June 30 and December 31, 1941.

Petrol Fuels.—The next London general meeting of the Institution of Automobile Engineers will be held at the Royal Society of Arts on June 6, at 6.15 p.m., when Mr. H. Fossett will read a paper entitled "Petrol—its development, past, present and future—with some notes on the potentialities of high-octane fuels for road vehicles."

Colvilles Limited.—Trading profit for the year 1943, after providing for taxation and war damage insurance, amounted to £538,969 (£513,323) and net dividends from subsidiaries were £109,438 (£109,212), making a total profit of £648,407 (£622,535). Adding £166,963 brought in makes £815,370 (£780,245). The allocation for ordinary depreciation and obsolescence of fixed assets is £250,000 (same), and for supplementary depreciation is £100,000 (£50,000), but nothing (£100,000) is provided for deferred repairs. The final dividend on the ordinary stock is 5 per cent., less tax, again making 8 per cent., less tax, for the year, and the amount carried forward is £252,088.

Driver's Death from War Injuries.—The death of an engine driver through his engine falling into a crater caused by an enemy bomb resulted in a claim being made by his widow against the L.N.E.R. In the action tried by Mr. Justice Charles the defence was that the deceased man (Mr. W. G. Greenfield) died from injuries which were war injuries within the meaning of the Personal Injuries (Emergency Provisions) Act, 1939, in which case no damages or compensation were payable by the company, but out of public funds. The judge came to the conclusion that, in spite of admitted negligence on the part of the company in failing to maintain a safe system of working, war injuries were the pre-

dominant cause of death. In case the Court of Appeal were to take a different view, he provisionally assessed the damages at £2,200.

South African Railways Earnings.—During the period from April 1 to May 6, earnings of the South African Railways amounted to £4,505,737 compared with £4,270,799 for the corresponding period of 1943.

Argentine North Eastern Railway Co. Ltd.—The directors have decided to pay on June 15 a further six months' arrears of interest on the 5 per cent. "B" debentures and debenture stock (namely, that ended June 30, 1933) together with the 5 per cent. per annum interest on such arrears, the total amounting to £3 17s. 5d. per cent., less income tax.

Belgian Wagon Hiring.—The Belgian wagon-hiring concern, Compagnie Auxiliaire Internationale des Chemins de fer, returned a gross profit for 1943 of fr. 10,460,000, compared with fr. 10,980,000 for 1942. Of that amount, fr. 7,550,000 (fr. 7,660,000) was allocated to depreciation on rolling stock; and the balance was absorbed by general expenditure and interest service. A new agreement concerning the hire of rolling stock and payments due has been concluded with the Compagnie Internationale des Wagons-Lits et des Grands Express Européens.

Midland Railway Co. of Western Australia Ltd.—Gross traffic receipts for the year to June 30, 1943, amounted to £1,392,954 (A£253,535), working expenses were A£149,541, against A£107,497, and net receipts rose from A£146,038 to A£243,413. Revenue account for the year shows a credit balance of £135,406 after charging renewals expenditure incurred during the year as well as a provision for deferred renewals, and after providing for loss on exchange. After meeting London administration expenses and directors' fees, and providing £80,000 for United Kingdom and Australian taxation there is a balance of £50,535. Debenture interest requires £33,867, leaving a credit balance of £16,668 to which is added £43,968 brought forward, making £60,636. The dividend of 4 per cent. on the unified ordinary stock for the year, after deduction of income tax at 10s. in the £, takes £11,863, and £2,373 is applied

towards redemption of reversionary certificates, leaving £46,400 to be carried forward.

Indian Diesel-Electric Shunting Locomotives.—It was announced recently that ten broad-gauge diesel-electric shunting locomotives, expected shortly to arrive in India from the U.S.A., are to be allotted to the North-Western Railway.

Paris Metropolitan Railway.—The Official German news agency states that the net profit of the Paris Metropolitan

British and Irish Railway Stocks and Shares

Stocks	Highest 1943	Lowest 1943	Prices	
			May 23, 1944	Rise/ Fall
G.W.R.				
Cons. Ord. ...	65½	57½	61	+ ¼
5% Con. Pref. ...	120½	108	119½	- 1½
5% Red. Pref. (1950) ...	110½	106	106	- 1½
5% Rt. Charge ...	137½	123½	133½	+ 1
5% Cons. Guar. ...	135½	121½	131½	+ 1
4% Deb. ...	118	107½	115	-
4½% Deb. ...	119	109½	116	-
4½% Deb. ...	124½	116	121½	-
5% Deb. ...	138	127	131½	-
2½% Deb. ...	77	72½	75½	-
L.M.S.R.				
Ord. ...	34½	28	31½	-
4% Pref. (1923) ...	66½	58	61	-
4% Pref. ...	80½	73	79	-
5% Red. Pref. (1955) ...	105½	102	104½	-
4% Guar. ...	107	98½	103	-
4% Deb. ...	109½	103½	107½	-
5% Red. Deb. (1952) ...	111½	108	109½	-
L.N.E.R.				
5% Pref. Ord. ...	12½	7½	9½	-
Def. Ord. ...	5½	3½	4½	- ½
4% First Pref. ...	66½	57½	61	-
4½% Second Pref. ...	36½	30½	33½	- ½
5% Red. Pref. (1955) ...	99½	93	100½	-
4% First Guar. ...	102½	94	99	-
4% Second Guar. ...	93½	85½	91	-
3% Deb. ...	86½	78½	84	-
4% Deb. ...	109½	101½	106½	-
5% Red. Deb. (1947) ...	106½	102	103	-
4½% Sinking Fund ...	108	103½	105½	-
Red. Deb. ...	108	103½	105½	-
SOUTHERN				
5% Pref. Ord. ...	80	72½	79	-
Def. Ord. ...	26½	20½	24½	- ½
5% Pref. ...	119½	106½	118½	-
5½% Red. Pref. (1964) ...	114	108½	114½	- 1
5½% Guar. Pref. ...	136	122	131½	+ 1
5½% Red. Guar. Pref. (1957) ...	117	109½	114½	-
4% Deb. ...	117½	106	113	-
5½% Red. Deb. ...	137	126	132	-
4% Red. Deb. (1962-67) ...	112	106½	110½	-
4% Red. Deb. (1970-80) ...	112	107	110½	-
FORTH BRIDGE				
4% Deb. ...	109	104½	105	-
4% Guar. ...	105	102½	103½	-
L.P.T.B.				
4½% "A" ...	125½	114	122½	-
5½% "A" ...	133½	123	131½	-
3½% Guar. (1967-72) ...	100½	97	99	-
5½% "B" ...	124	114	122½	-
"C" ...	72	53	72	-
MERSEY				
Ord. ...	34½	27	33½	-
3% Perp. Pref. ...	68	59½	69	-
4% Perp. Deb. ...	104	102½	103	-
3½% Perp. Deb. ...	83	78½	79	-
IRELAND* BELFAST & C.D.				
Ord. ...	9	6	6½	+ ½
G. NORTHERN				
Ord. ...	24½	16	25½	+ 4½
Pref. ...	—	—	45	+ 5
Guar. ...	—	—	64½	+ 1½
Deb. ...	—	—	86	+ 4
G. SOUTHERN				
Ord. ...	30	9½	44½	+ 1½
Pref. ...	30	11	44½	+ 1½
Guar. ...	64	26½	63½	+ 1
Deb. ...	88½	51½	88	+ 1

* Latest available quotations \$ ex-dividend



An interior view of the recently opened staff canteen at Waterloo Station, Southern Railway. The canteen, constructed in what was a disused arch, has a seating capacity for 200. (See paragraph in our May 5 issue)

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Railway Company for 1943 amounted to £49,080,000, compared with £45,670,000 for 1942. A dividend of £39.57 (£67.5) was paid on each ordinary share, and of £32.25 (£60) on each preference share.

First Direct British-Uruguayan Wireless Channel.—The first direct wireless channel between Great Britain and Uruguay was established on May 22. The circuit was made by Cable & Wireless Limited in London and by the Uruguay Administration in Cerrito.

Brake Equipment and Braking Tests on S.R. Electric Locomotive.—At a general meeting of the Institution of Locomotive Engineers to be held in the hall of the Institution of Mechanical Engineers, Storey's Gate, Westminster, S.W.1, at 5.30 p.m. on May 31, a paper on "Brake Equipment and Braking Tests of Southern Railway C.C. Electric Locomotive No. 1" will be given by Messrs. L. Lynes and A. W. Simmons.

Craven Bros. (Manchester) Ltd.—The statement by Mr. J. R. Greenwood (Chairman & Managing Director) circulated with the report and accounts, shows that the two works of the company were fully employed throughout the year and output was maintained at a high level. Reduction on profit on operations was due to continued increases in costs of wages and materials, which increases had to be absorbed in fixed price contracts, and to the greatly reduced demand in 1943 for simple type production machines manufactured in quantity for the company by subcontractors in 1940, 1941 and 1942. The financial position of the company was sound and strong. During the war it had been fully employed on its normal products, the demand for which continued to be high. Development and research work had been continued.

61st L.N.E.R. Canteen Opened.—The 61st L.N.E.R. canteen, which seats 200, was opened at Bridgehouses Goods Depot, Sheffield, on May 2, by Mr. George Mills, Divisional General Manager, Southern Area, L.N.E.R. Its present output of 500 meals a day brings the total number of meals served in L.N.E.R. canteens to 991,000 a month. The 24-hour service caters not only for the 700 members of the goods depot, but also for the traffic, locomotive, and engineering departments. A feature of the kitchen is the "plating-up" table; a revolutionary idea in canteen catering, which is an exclusive L.N.E.R. development, evolved by Mr. E. K. Portman Dixon, the company's canteen superintendent. This stainless steel table has a plate-track which in effect gives a hot assembly line, producing 50 complete dinners a minute. The great advantage of the new system is that it obviates storage and loss of nutritive value.

Guests at the ceremony in addition to Mr. Mills were Mr. H. Watson, General Manager & Secretary, Sheffield Corporation Transport; Alderman A. J. Bailey, Chairman, Sheffield Corporation Transport; Mr. Cuthbert Jones, District Goods & Passenger Manager, L.M.S.R., Sheffield; and the following members of the L.N.E.R.: Messrs. E. Shaw, Goods Agent, Sheffield; F. W. Rostern, Superintendent; E. K. Portman Dixon, Canteen Superintendent; F. W. Wheddon, District Passenger Manager, Manchester; H. C. Johnson, Acting Assistant Superintendent, Western Section, Southern Area; Ockenden, Canteen Supervisor; H. J. Price (representing Mr. George Dow, Press Relations Officer); P. C. Randall, Divisional General Manager's Office, H.Q.I.; D. M. Gracie, District Goods Manager, Sheffield; A. F. Moss, District Superintendent, Manchester; K. B. Turner, District Engineer,

Sheffield; W. H. Burton, Acting Stationmaster, Sheffield; Mr. Collier, District Electrical Assistant, Guide Bridge; Messrs. H. Molloy, Secretary, Local Departmental Committee; G. W. Cooke, A. E. Epworth, W. B. Biggin; Miss Dewar, Local Departmental Committee; Messrs. F. King, Branch Secretary, National Union of Railwaysmen; and W. Scholey, Branch Secretary, Railway Clerks' Association.

Permanent Way Institution.—By the courtesy of Mr. H. A. Morley, Director & Works Manager, Shelton Iron, Steel & Coal Co. Ltd., Etruria, near Stock-on-Trent, members of the Manchester & Liverpool and Notts. & Derby Sections of the Permanent Way Institution will be able to visit that firm's works on June 3, commencing at 3 p.m.

A New Light Metals Company.—A new company has been formed by High Duty Alloys Limited, Reynolds Tube Co. Ltd. and Reynolds Rolling Mills Limited to collaborate with designers and constructors in any industry to secure the best use of hiduminium alloys. Further information will be sent on request to Hiduminium Applications Limited, Farnham Road, Slough, Bucks.

"Paper Packs a Punch."—An exhibition with the title "Paper Packs a Punch" was opened at Marble Arch on May 23 by Mr. Brendan Bracken, the Minister of Information. It has been organised by the Waste Paper Recovery Association to show the part played by paper in equipping the Armed Forces for the second front, and is to remain open (admission free) for three weeks from the date of opening; the Association hopes afterwards to send it to other cities if the transport situation permits. In his speech the Minister stressed the vital importance of saving paper, and said that a scandalous amount of waste was still occurring. Our successes against enemy submarines did not mean that care in that respect could be relaxed; in fact, it would probably be necessary to continue saving paper after the war.

Contracts and Tenders

The Visco Engineering Co. Ltd. has purchased a convenient modern factory adjacent to its present works. This will nearly double the working space and permit contemplated developments.

The Machine Tool Control is now allowing Edward G. Herbert Limited to resume manufacture of the No. 2 10 in. x 10 in. and the No. 2A 12 in. x 12 in. Rapidor heavy duty production hacksawing machines, and also the Rapidor girder sawing machine, capacity 12 in. x 8 in. Arrangements are being made at once to put these machines back into production, and they will be available in the ordinary way against certificate. The position as to the belt-driven Rapidor Manchester sawing machines is now becoming easier, and practically stock delivery can be given. Machine Tool Control Certificates are necessary for merchants' stock.

Forthcoming Meetings

May 31 (Wed.).—Institution of Locomotive Engineers, at the Institution of Mechanical Engineers, Storey's Gate, Westminster, London, S.W.1, 5.30 p.m. "Brake Equipment and Braking Tests of Southern Railway C.C. Electric Locomotive No. 1," by Messrs. L. Lynes and A. W. Simmons. General meeting.

June 3 (Sat.).—Permanent Way Institution (Manchester & Liverpool and Notts. & Derby Sections), visit to Shelton Iron, Steel & Coal Co. Ltd. works, Etruria, near Stoke-on-Trent, 3 p.m.

June 6 (Tues.).—Institution of Civil Engineers, Great George Street, Westminster, London, S.W.1, 5.30 p.m. Annual general meeting.

June 13 (Tues.).—Institution of Civil Engineers, Great George Street, Westminster, London, S.W.1, 5.30 p.m. James Forrest Lecture by Professor C. E. Inglis.



Mr. George Mills, Divisional General Manager, Southern Area, L.N.E.R., being served with the first lunch at the new staff canteen at Sheffield (Bridgehouses), after he had opened it on May 2. Standing behind him are (right to left) Mr. E. Shaw, Goods Agent, Bridgehouses Depot, Sheffield; Alderman E. J. Bailey, Chairman, Sheffield Corporation Transport Committee; Messrs. D. M. Gracie, District Goods Manager, Sheffield; and K. Watson, General Manager, Sheffield Corporation Transport. (See accompanying paragraph)

Railway Stock Market

Stock markets have been less active because of the general tendency to await war developments, although British Funds again showed fractional gains, and the undertone was firm with strong features among shipping and industrial shares. In the absence of improved demand, home railway stocks have been inclined to ease. There were also only fractional movements in senior preference and prior charge stocks.

There is a tendency in markets to await any statement which may be made by the Ministry of War Transport on the claim for revision of the fixed rental agreement put forward on behalf of stockholders. The prevailing belief is that, although it is generally recognised that the agreement bears hardly on holders of L.N.E.R. junior stocks, revision of the agreement is unlikely, particularly as it would presumably require lengthy negotiations between the railways and the authorities. It is only fair to remember that when the fixed rental was agreed, all war contingencies were borne in mind, including the possibility that the railways might suffer very heavy air-raid damage. The agreement will have to be judged over its full period of life, particularly as it will give holders of the junior stocks an assured dividend position during the difficult period of the change-over to peacetime working. Valuation of the junior stocks on a high yield basis is not a reflection of the dividend position under the agreement, but is due to continued uncertainty as to

the post-war outlook of the railways in relation to transport control and kindred problems. It, therefore, continues to be hoped that the attitude of the Government to the latter will be indicated as soon as possible. Bearing in mind the proved ability of the railways to deal with a much larger volume of traffic than was experienced in pre-war years, that just before the war the "square deal" proposals were on the point of being implemented, and that they have in no respect given up their right to standard revenue as defined in the 1921 Act, the railways are undoubtedly well placed for any negotiations regarding post-war transport organisation and control.

Great Western ordinary regained an earlier small decline, and at 61 was unchanged on balance. The 5 per cent. preference stock at 119 was half-a-point down, and the guaranteed stock improved slightly to 131½, and the 4 per cent. debentures were maintained at 115. L.M.S.R. ordinary was 31½, compared with 32 a week ago; but the senior preference improved from 79 to 79½, and the 1923 preference at 60½ was unchanged on balance, and the guaranteed stock remained at 103. L.N.E.R. second preference regained an earlier decline, and at 32½ was the same as a week ago; buyers were attracted by the large yield. A small part of last year's dividend on this stock came out of income from sources not included in the fixed rental; but it is assumed that the dividend would

not have been increased unless it was felt there were reasonable prospects of its being maintained. L.N.E.R. first preference remained at 60½, the first guaranteed at 99½ and the second guaranteed at 91; the 3 per cent. debentures were 84 and the 4 per cent. debentures 107. Southern deferred moved back from 25 to 24½, and after easing slightly, the preferred rallied to 79. On the other hand, Southern preference at 118 was half-a-point down; the guaranteed stock was 131½, and the 4 per cent. debentures again 113. London Transport "C" has been maintained at 72½.

Argentine railway stocks attracted very little business and were inclined to react as a result. Various debenture stocks moved better at one time, but gains were not fully held. B.A. Gt. Southern ordinary at 11½ was the same as a week ago, and the 5 per cent. preference 24; the 4 per cent. debentures attracted some attention on yield considerations, and although best prices touched were not held, have improved on the week from 55½ to 57½. Central Argentine stocks tended to be more active, but subsequently the ordinary eased to 8½, the 4 per cent. debentures to 49½, and the 5 per cent. debentures to 52½. Elsewhere, San Paulo ordinary remained steady at 54, and United of Havana 1906 debentures at 29½ were also unchanged on balance. Leopoldina debentures were 56½. Canadian Pacifics at 16 were again better on the week.

Traffic Table and Stock Prices of Overseas and Foreign Railways

Railways	Miles open	Week ending	Traffic for week			Aggregate traffics to date			Shares or stock	Prices				
			Total this year	Inc. or dec. compared with 1942/3	No. of weeks	Totals		Increase or decrease		Highest 1943	Lowest 1943	May 22, 1944	Yield %	
						1943/4	1942/3							
South & Central America														
Antofagasta (Chile) & Bolivia	834	14.5.44	26,350	+ 90	20	556,690	525,920	+ 30,770	Ord. Stk.	15½	10	10½	Nill	
Argentine North Eastern	753	13.5.44	17,730	+ 3,162	46	666,402	566,388	+ 100,014	6 p.c. Deb.	22½	18	17½	Nill	
Bolivar	174	Apr., 1944	5,106	- 444	17	21,059	21,881	- 822	Ord. Stk.	19	16½	16½	Nill	
Brazil	...	...	...	...	...	...	...	...	Ord. Stk.	8½	5½	5½	Nill
Buenos Ayres & Pacific	2,807	13.5.44	128,700	+ 32,400	46	4,934,760	4,601,940	+ 332,820	Ord. Stk.	17½	9½	12	Nill	
Buenos Ayres Great Southern	5,080	13.5.44	149,820	- 9,720	46	8,128,980	7,404,660	+ 724,320	Ord. Stk.	17½	9½	12	Nill	
Buenos Ayres Western	1,930	13.5.44	60,060	+ 540	46	2,577,780	2,488,200	+ 89,580	Ord. Stk.	16	9½	11	Nill	
Central Argentine	3,700	13.5.44	171,750	+ 52,212	46	6,990,912	6,050,409	+ 940,503	Ord. Sh.	10½	6½	8½	Nill	
Do.	...	...	...	...	...	...	...	...	Ord. Stk.	4½	3	4	Nill
Cent. Uruguay of M. Video	972	13.5.44	37,297	+ 467	46	1,550,491	1,344,687	+ 205,804	Ord. Stk.	7½	4½	4½	Nill	
Costa Rica	262	Apr., 1944	25,389	+ 7,380	42	225,154	150,966	+ 74,188	Stk.	16	12½	15	Nill	
Dorada	70	Apr., 1944	24,058	+ 7,258	17	97,339	76,320	+ 21,019	I Mt. Db.	96	92	93½	6½	
Entre Rios	808	13.5.44	19,926	+ 1,716	46	895,116	812,760	+ 82,356	Ord. Stk.	9	5½	6	Nill	
Great Western of Brazil	1,030	13.5.44	18,200	+ 4,600	20	436,300	309,900	+ 126,400	Ord. Sh.	59½	24/41	36/3	Nill	
International of Cl. Amer.	794	Mar., 1944	879,554	+ 889,552	12	82,333,642	82,022,352	+ 831,290	...	...	...	...	Nill
Interoceanic of Mexico	...	...	...	...	...	...	...	...	1st Pre.	24	14	14	Nill
La Guaira & Caracas	224	Apr., 1944	7,490	- 950	17	29,446	35,875	- 6,429	5 p.c. Deb.	90	80	81½	Nill	
Leopoldina	1,918	6.5.44	36,995	+ 6,606	19	823,024	591,916	+ 231,108	Ord. Stk.	7½	4	5	Nill	
Mexican	483	14.5.44	47,400	+ ps. 120,500	23	ps. 8,073,400	ps. 6,959,400	+ ps. 1,114,000	Ord. Stk.	1½	4	4	Nill	
Midland Uruguay	319	Feb., 1944	16,340	- 1,701	34	186,487	116,700	+ 19,787	Ord. Sh.	83½	71/3	70½	Nill	
Nitrate	382	15.5.44	5,425	+ 290	20	75,540	55,150	+ 20,390	Pr. Li. Stk.	75	51½	70	8	
Paraguay Central	274	12.5.44	58,043	+ 87,403	20	82,343,451	81,871,950	+ 847,1501	Pr. Li. Stk.	17½	104	11½	Nill	
Peruvian Corporation	1,059	Apr., 1944	121,109	+ 31,298	44	1,085,795	847,392	+ 246,403	Pr. Li. Stk.	17½	104	11½	Nill	
Salvador	100	Mar., 1944	174,000	+ c 34,000	38	c 1,158,000	c 912,000	+ c 246,000	Ord. Stk.	71	57	54½	3½	
San Paulo	153	—	—	—	—	—	—	—	Ord. Stk.	37½	20½	17½	Nill	
Tatral	160	Apr., 1944	4,645	+ 2,175	44	54,660	43,816	+ 10,844	Ord. Stk.	8½	3½	3½	Nill	
United of Havana	1,301	13.5.44	72,891	+ 15,291	46	2,642,728	2,357,809	+ 284,919	Ord. Stk.	—	—	—	Nill	
Uruguay Northern	73	Feb., 1944	1,425	- 34	34	11,503	11,064	+ 439	...	...	...	...	Nill
Canada	Canadian Pacific	17,034	14.5.44	1,229,200	+ 160,600	20	22,504,000	19,539,400	+ 2,964,600	Ord. Stk.	18	13½	16	Nill
India	Barsi Light	202	Mar., 1944	25,425	+ 2,332	52	263,025	220,695	+ 42,330	—	—	—	—	
Bengal-Nagpur	3,267	Mar., 1944	1,036,350	- 125,175	11	12,526,575	11,211,375	+ 1,315,200	Ord. Stk.	104½	101½	108½	3	
Madras & Southern Mahratta	2,939	Mar., 1944	358,125	- 7,925	52	10,447,866	8,913,942	+ 1,533,924	—	—	—	—	—	
South Indian	2,349	20.12.43	199,410	+ 24,449	37	5,321,558	4,562,445	+ 750,113	—	—	—	—	—	
Various	Egyptian Delta	—	20.4.44	20,399	+ 6,556	4	603,664	458,496	+ 145,168	Prf. Sh.	6½	2½	4	Nill
Manila	—	—	—	—	—	—	—	—	B. Deb.	45	32	40	6	
Midland of W. Australia	277	Feb., 1944	21,583	- 6,758	33	245,504	252,708	- 7,204	Inc. Deb.	101	93	100½	—	
Nigerian	1,900	29.1.44	99,395	+ 18,357	30	3,418,855	2,944,340	+ 474,515	—	—	—	—	—	
South Africa	13,291	5.2.44	906,790	+ 63,914	46	37,522,295	34,935,498	+ 2,586,797	—	—	—	—	—	
Victoria	4,774	Dec., 1943	1,414,598	- 101,765	—	—	—	—	—	—	—	—	—	

Note. Yields are based on the approximate current price and are within a fraction of ½. Argentine traffics are given in sterling calculated @ 16½ pesos to the £

Receipts are calculated @ 1s. 6d. to the rupee

Ex dividend